MARINE RECORD

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A. J. DREXEL'S YACHT MARGARITA.

The Ailsa Ship Building Co., of Troon, Scotland, were the fortunate contractors for the above named yacht, which was launched June 10. Her owner is Anthony J. Drexel, of Philadelphia, Pa., who was unpatriotic enough to go to Great Britain for his yacht, notwithstanding the fact that every dollar of his money has been made out of Americans, right here in the United States, says the American Shipbuilder. The vessel was designed by George L. Watson, of Glasgow. The Margarita is 240 feet on load water line, 280 feet over all, 33 feet 6 inches beam, 20 feet deep and 15 feet draft. Her tonnage under yacht measure will be 1,300. She is built of steel, and will be classed 100 A1 by Lloyds. Two sets of engines by David Rowan & Sons, of Glasgow, have been given her, and her propellers, as she is a twin-screw, are of bronze. Steam will be furnished by two Scotch boilers, and her indicated horse-power being about 3,400, she is expected to attain a maximum speed of 16½ knots per hour. Her bunker capacity will be 315 tons, which, at an average speed of ten knots, will take her on very long cruises without requiring to recoal. Her water tanks have a capacity of thirty tons.

Everything used in the construction of the Margarita is of the best, and her equipment will be complete. She will have two dynamos and two storage batteries, refrigerating rooms and all appliances that will contribute to the convenience and comfort of her owner and his guests. Then there will be a steam laundry, a galley of liberal dimensions, fitted with every possible modern improvement, and it has been ordered that her crew shall have comfortable quarters. The boat equipment of the yacht will consist of one gig, three liteboats, one dinghy, two steam launches and a half-rater, so that there will be plenty of opportunity for auxiliary trips when in port, either by steam or sail. The library, bouduoir, and saloon have been designed by T. L. Watson, brother of the designer of the yacht, in the most ornate and beautiful style. The ceilings of the principal rooms are in polished mahogany and oak. In the after part of the ship is the owner's stateroom, a splendid apartment, extending the whole width of the yacht. The dining saloon is forward and is surmounted by a beautiful dome, to be filled in with richly stained glass. Capt. Rayner, an experienced navigator, will have command, and a crew of 54 hands have been engaged. One feature will certainly commend itself, and that is that her shade or promenade decks extend the full length of the house and reach out on each side her full width, affording a covered walk in oppressive or rainy weather. The space between the dining hall and forecastle will be given over to guests of the owner, and, like the cabin staterooms, will be furnished in a luxurious manner. Divided by a wide passageway will be the officers' quarters and those of the crew.

COAST AND FOREIGN SHIPBUILDING.

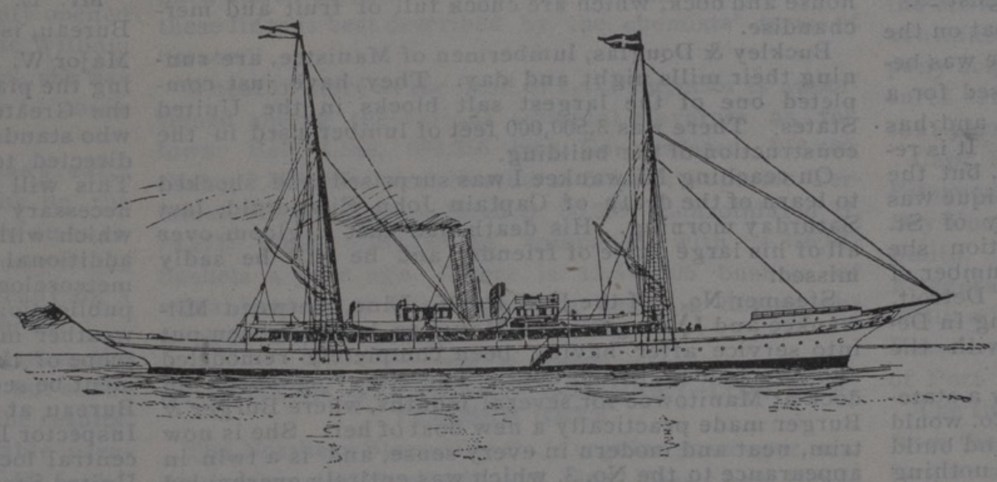
The Canadian Department of Marine and Fisheries has just been notified of the launch of the new fishery cruiser Osprey, which is building at the yard of Joseph McGill, Shelbourne, N. S. Her builder says she is different from the other cruisers and will prove one of the fastest things afloat. She is 120 feet long over all, and 100 feet on the water line by 25 feet beam, and draws 13½ feet. Mrs. L. H. Davies performed the christening ceremony.

The Harlan & Hollingsworth Co., of Wilmington, Del., launched the Standard Oil Co.'s new tug Atlas Saturday, the 22d. This is a sea-going tug, 130 feet over all, 117 feet between perpendiculars, 25½ feet beam, 14 feet 6 inches depth, schooner rigged, built entirely of steel, with triple-expansion engine, 14½ in., 23½ in., 39 in. by 28 in., and one Scotch type boiler, 13 feet 9 inches mean diameter, 11 feet 6 inches long. She is intended for ocean towing.

Manager Lewis Nixon, of the Crescent shipyard, Elizabeth, N. J., has signed a contract with the Mexican Improvement Co., of Tobasco, Mexico, represented by Santiago Carter, of that city, for a stern-wheel passenger and freight vessel. This vessel will receive a large subsidy from the Mexican government for carrying the mails, and will open up about 100 miles of rich river trading country. The vessel will be named the Rudolfo. She is only 60 feet long by 12 feet beam, and has a draft of only 18 inches.

Capt. John E. Higgins has given a contract to Dougan, Bringham & Cowen to construct a dry-dock at the Narrows, five miles west of Tacoma, Wash. It will cost $86,000. The dimensions of the dock will be: Length, clear of keel blocks, 425 feet; depth, 21 feet; width, 90 feet at the top and 50 feet on the bottom.

The citizens of Indiana will present the battleship named after their state with a silver service this week when the squadron drops anchor at Tompkinsville.



DREXEL STEAM YACHT MARGARITA.

VISIBLE SUPPLY OF GRAIN.

As compiled for THE MARINE RECORD by George F. Stone, Secretary Chicago Board of Trade, August 22:

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY. Bushels
Albany	.....	25,000	50,000	.....	.....
Baltimore	1,344,000	1,085,000	210,000	52,000	.....
Boston	948,000	497,000	231,000	.....	.....
Buffalo	1,095,000	635,000	302,000	217,000	226,000
" afloat	.....	.....	.....	.....	.....
Chicago	13,156,000	5,812,000	1,351,000	312,000	14,000
" afloat	.....	.....	.....	.....	.....
Cincinnati	16,000	3,000	12,000	6,000	11,000
Detroit	325,000	17,000	21,000	32,000	.....
" afloat	.....	.....	.....	.....	.....
Duluth and Superior	5,188,000	6,000	86,000	198,000	105,000
" " afloat	.....	.....	.....	.....	.....
Indianapolis	421,000	88,000	.....	.....	.....
Kansas City	881,000	23,000	32,000	5,000	.....
Milwaukee	206,000	1,000	.....	353,000	29,000
" afloat	.....	.....	.....	.....	.....
Minneapolis	12,542,000	11,000	113,000	51,000	5,000
Montreal	280,000	60,000	258,000	6,000	36,000
New York	1,852,000	664,000	1,378,000	22,000	60,000
" afloat	81,000	17,000	73,000	.....	.....
Oswego	57,000	55,000	.....	.....	40,000
Peoria	160,000	55,000	325,000	18,000	3,000
Philadelphia	580,000	108,000	135,000	.....	.....
St. Louis	2,486,000	976,000	135,000	15,000	.....
" afloat	90,000	17,000	.....	.....	.....
Toledo	768,000	121,000	162,000	85,000	.....
" afloat	.....	.....	.....	.....	.....
Toronto	113,000	.....	66,000	.....	22,000
On Canal	984,000	208,000	695,000	175,000	57,000
On Lakes	1,622,000	3,340,000	1,267,000	129,000	100,000
On Mississippi	.....	286,000	5,000	.....	.....
Grand Total	45,189,000	14,110,000	6,907,000	1,676,000	708,000
Corresponding date 1895	35,088,000	5,287,000	3,719,000	390,000	45,000

NEWS AROUND THE LAKES.

BUFFALO.

THIS PORT PROSPEROUS WHILE ALL OTHERS ARE COMPLAINING—GRAIN RECEIPTS CONTINUE VERY HEAVY.

Special Correspondence to The Marine Record.

BUFFALO, August 25.

It looks a little odd to see such old-stager ore boats in this port as the Republic and Briton, but they are here and they bring corn mostly, for all their reputation. This does not mean that we are not getting any ore, for about 17,000 tons came in last week. But it is the grain that counts now, to the tune of 7,645,000 bushels last week, counting flaxseed and flour. How long this movement is to last is not easy to tell, but one thing is certain, this port is not going to cry so long as it does last. Here are the elevators full of grain at this time of year, something not known before, and boats waiting for somewhere to unload.

It appears to be developing that the 200,000-bushel cargoes are not making it easy for the people who have to take care of them here. If they could get their loads all in straight lots it would be plain sailing all the way, but it is hard to do this when there is so much in a load and the result is that some of these princely cargoes have to be hawked about a good while before they are all out. Then there is another snag to encounter. Most of the elevators are in the vicinity of a slip or a bridge, and the 400 odd feet of steamer is sticking out across the other passage and blocking the harbor.

Buffalo is no Chicago in this regard, but there are sometimes a good many boats inside, and when there are it takes generalship to run the business ship-shape. If anyone doubts this he is referred to Harbormaster Soper. The Maricopa on her first trip here, caught it rather worse than the average, for she had to be taken out into the lake twice and winded, before her load was all out. It happened that the places inside where she could be winded were full of boats at the time. There came in thirty two cargoes one day last week, all in about eighteen hours, most of them, of course, grain.

The big spurt in lumber receipts of last month has dropped down to normal size, which means, this slow season, less than 10,000,000 feet a week. Business has probably reached its highest for midsummer and will drop off somewhat all around.

The schooner A. L. Andrews appears to have taken the advice of some wag who declared that to live a long life a person must have an incurable disease, for then he would take care of himself. The Andrews has had a leak somewhere, so the dockmen report, for quite a long time, but it was not a very serious matter, and has not been stopped. She came in Sunday morning's gale, though, with the leak doing a little more execution than common and will probably be looked over this time. The gale drove the small vessels in for shelter as it seldom does the fleet on Lake Erie at this time of the year. Such tows as the S. C. Hall came back and the Cleveland steel canal tow had to return.

The preliminary passage at arms between the owners of the steamer St. Louis and the G. F. Williams did not come off here this trip. Mr. H. A. Hawgood came down from Cleveland to set the Williams free if the opposition should drop on her, but nothing was done. The fact is, the owner of the St. Louis is not satisfied that the $7,300 which the surveyors thought would fix her up

will do anything of the sort, and he may be waiting for the developments when the work begins.

As the work of raising the Oceanica and the William Chisholm in St. Clair Lake goes on it slowly develops how the collision came about, in spite of the silence of captains and the crews. Capt. McLeod had to put a 19-foot patch on the Chisholm before he could raise her, because the Oceanica's stem had cut her down to the bilge. The Oceanica's bow is crushed in, which explains the matter so far. It is said on the Chisholm side of the case that the Oceanica changed her signals twice and so confused the Chisholm that she did not know what to do. The Oceanica's side is not out yet.

The boom in the salt shipping by lake continues. If this port continues to send Chicago two big cargoes of it every week, besides all that goes by the package freight boats, that town will be pickled by fall. Some of it ought to be thrown into the Chicago River to see what the effect would be. It is about cheap enough for any use.

The new flour warehouse of the Northern Steamship Co. will be ready about next week. Then there will be another flour-storage place. The fact is, though, that the new rule charging storage on all ex-lake flour that has been in warehouse twenty days has cleaned out the stocks of flour terribly and cut off the receipts not a little, so that there is not the delay at the package-freight warehouses that there was. One of the Northern boats was held over Sunday for lack of an elevator, which may cause the company to change its mind and build an elevator of its own if this sort of thing goes on.

There are next to no vessels laid up here yet, in spite of expectations to the contrary. There are always several waiting somewhere, as the Stone and Pasadena are now, but first one knows out they go again. The Lehigh has two wooden liners laid up and the Lackawanna has the Grand Traverse in ordinary, but they do not cut much figure in the business.

If the canal men should succeed this time and get a good elevator of their own built here they would do this port a world of good, in one direction at least, for the stories of overcharging by the elevators would then come to the ground. There is need of such a house, and the subscriptions now under way may bring the plan to a success. CHAMBERLIN.

DETROIT.

THE STEAMER UNIQUE SOLD TO JOHN G. KEITH, OF CHICAGO, WHO ACTS AS AGENT FOR UNKNOWN PARTIES, PROBABLY CUBANS—MR. LIVINGSTONE'S SUGGESTION FOR IMPROVING THE FREIGHT SITUATION.

Special Correspondence to The Marine Record.

DETROIT, August 25.

The steamer Unique, the unluckiest steamboat on the lakes for two years, has been sold. The price was between $35,000 and $40,000. She was purchased for a party unknown by Capt. Keith, of Chicago, and has been repairing at the Frontier Iron Works. It is reported that she is intended for Cuban service, but the truth of the statement lacks proof. The Unique was built in 1894, and was owned by C. McElroy of St. Clair, and others. Almost from her inception she proved an unlucky boat, and her amazing number of accidents fairly astonished the vessel men of Detroit. She was very speedy, being as fast as anything in Detroit, and proved herself rather a favorite with the traveling public in spite of her many mishaps.

Considerable comment has been stirred up by a statement that the Hawgood & Avery Transit Co. would lengthen their steamer S. S. Curry to 500 feet, and build a consort to go with her 450 feet long. While nothing of the sort is likely to be done for some time, this company certainly realizes that only the big boats are making money. It is estimated that two boats built as above will carry some 15,000 tons of iron ore. Waldo A. Avery has made a careful study of the European shipping and is known to have very marked views on Great Lake commerce, so it is possible that the proposed extension of their line may be due to that somewhat. In discussing the matter a few days ago, Mr. Avery said: "The trade of the lakes, like the much more greatly diversified trade of the ocean, is centering itself in great corporate combinations and the only way left is to oppose might with might. On the Clyde, at Liverpool, in London, tramp ships of 4,000 tons are laid up the greater part of the time, often for weeks at a stretch, and the lakes, in my opinion, are fast coming to such a position. What we need is combination and we need it badly."

Thomas Adams reports that things are "worse," though he had supposed them as bad as possible before. He now looks for no marked change till election is over.

W. A. Livingstone has suggested that if one-half the boats would lay up the other half might stand a fair chance of keeping even anyway. He said: "There are few owners of any consequence who do not control at least two boats. Now, if they would all lay up one out of every two afloat to-day, I think we would see a marked change for the better almost immediately."

The Detroit Boat Works last Thursday completed a 25-foot double cot-rigged boat for W. C. Farrington, of the Northern Steamship Co., and sent her to Duluth on board the steamer Northern Light.

The D. B. I & W. ferry steamers Pleasure and Promise are chartered to the Toledo International Yacht Race Association for the races there. The Promise is limited to 1,000 people at $1.50 each, and the Pleasure will carry 1,500 people at $1.00 each. The association has the option of keeping the steamers the whole week.

The position of Mr. C. C. Schauroth, clerk of all bids in the office of Col. Lydecker, has been abolished and he has been transferred to Grand Rapids, where he will assist Capt. Townsend, who was recently placed in charge of river and harbor work on the east shore of Lake Michigan.

The L. C. Waldo had another narrow escape last Thursday. She was twice struck in a fog in Hay Lake by the steamer Philip Minch. The Minch grounded shortly after striking her the second time.

A report that the steamer Frank E. Kirby is for sale is totally without foundation. She is probably the most popular day passenger boat out of the city, and her owners are and always have been well satisfied with her.

The steamer Imperial carried the body of Hon. W. D. Balfour, M. P., from Windsor to Amherstburg on Saturday. The steamer carried half-mast flags, and was met by a deputation at Amherstburg, the dead politician's home.

Boats in passing the wreck of the Oceanica are checking down to avoid causing too much commotion and interfering with the divers at work. There are three divers at work on the wreck. McC.

CHICAGO.

SOME FAMOUS RAPID HANDLING RECORDS BEING MADE ON THE CALUMET—COAL RECEIPTS.

Special Correspondence to The Marine Record.

OFFICE of the MARINE RECORD,
CHICAGO, Aug. 26.

This is the second week the Bradley steamer Maurice B. Grover has been in ordinary here; the steamer Hesper has been laid up here several weeks.

Mr. W. J. Conners' handsome steel steam yacht Enquirer, of Buffalo, arrived here last week, and was visited by a large number of marine men and others during her stay. She was much admired, and many expressed themselves that she was the handsomest yacht they had ever seen.

I paid a short visit to Manistee and Milwaukee early this week. At the former port the Manistee Iron Works are building a fore-and-aft compound marine engine, 18 and 24 by 36 inches.

Seymour Bros., of Manistee, must be doing a thriving business, judging from the appearance of their warehouse and dock, which are chock full of fruit and merchandise.

Buckley & Douglas, lumbermen of Manistee, are running their mills night and day. They have just completed one of the largest salt blocks in the United States. There was 3,500,000 feet of lumber used in the construction of the building.

On reaching Milwaukee I was surprised and shocked to learn of the death of Captain John Eitzgerald, last Saturday morning. His death had cast a gloom over all of his large circle of friends, and he will be sadly missed.

Steamer No. 4 of the F. & P. M. Line, between Milwaukee and Ludington and Manistee, has just been put into service after having been completely remodeled and overhauled throughout. The No. 4 has been in dock at Manitowoc for several months, where Burger & Burger made practically a new boat of her. She is now trim, neat and modern in every sense, and is a twin in appearance to the No. 3, which was entirely overhauled a year ago. The interior cabin finish of the No. 4 is in lincrusta walton, which gives unusual brightness and attractiveness. The ornamental work, electric light plant, etc.; were furnished and put in by Milwaukee firms, the company getting everything done in Milwaukee that could be secured there. The decoration is by Nase, Kraus & Koken; the carpets, draperies, etc., by Stark Bros.; the electric plant by the Julius Andrae & Sons Co., and the Wisconsin Electrical Construction Co., all of Milwaukee. The capacity of the boat has been materially increased. The sleeping rooms, of which there are over forty, are supplied with 6-inch hair mattresses on woven wire springs, and each room is supplied with electric lights and all modern furnishings. General Agent Whitney thinks the company now has two as handsome and comfortable steamers as touch at Milwaukee.

The Queen City arrived at South Chicago Monday evening of last week, at 5:30 with 4,109 gross tons of iron ore. Twenty-seven hours later she was being towed down the Calumet with 5,796 tons of grain aboard. The handling of over 10,000 tons of freight in less than twenty-four working hours is said to be without precedent.

The steamer Griffin also did some fast work at South Chicago Tuesday night of last week. She arrived there at 6 o'clock and left at 10 with 83,000 bushels of wheat aboard.

Receipts of anthracite coal by vessels show an increase of 11,288 tons and by rail an increase of 26,980 tons for July, 1896, as compared with the corresponding month last year. But the total increase from January 1 to July 31 this year is only 199 tons. The extremely low rate—20 cents—at which charters are now made, has enabled shippers to nearly double the tonnage shipped from Buffalo last week, as compared with the first week of August.

Bituminous coal receipts show increases in all varieties except Indiana, which have decreased during July, due, of course, to the strikes.

The news of the decease of Captain John Fitzgerald president of the Milwaukee Dry Dock Company, at Milwaukee, on Saturday, was received with expressions of profound regret among Chicago marine men. Captain Fitzgerald's long service and large vessel interests had given him a prominent place in the lake marine, and his kind ways, geniality and honesty, had made him many friends. Flags were placed at half-mast on many vessels out of respect to the memory of the deceased. WILLIAMS.

DULUTH.

THE COAL RATE BETWEEN THE HEAD OF THE LAKES AND THE TWIN CITIES AGAIN REDUCED—REBELLION AGAIST INCREASED PRICES.

Special Correspondence to The Marine Record.

DULUTH, August 25.

The coal dealers declare that business is dead. No orders to speak of are coming in from outside, although the traveling men who are now out are reporting a few contracts made. They are, however, nearly all for soft coal. Hard coal is not selling at all, owing to the fact that the price is higher than it has been in years at this season. Letters are being received from men throughout the West, who ask why it is that when lumber and all other commodities are way down in price, coal should be higher than ever. They think a similarity of conditions should prevail in the coal and all markets.

The roads between the Twin Cities and Duluth have again cut the rate on soft coal between the two points to 75 cents. It was cut several weeks ago from $1 to 75 cents, and a raise was then announced. This was conditioned on the Twin City-Chicago lines raising to $1.62 from $1.50. This deal seems to have fallen through. Some of the dealers here do not think the 75-cent rate is sufficiently low to enable them to successfully compete with the West Virginia coal.

CLEVELAND.

THIS PORT TO POSSESS, NEXT TO WASHINGTON, THE FINEST WEATHER OFFICE IN THE UNITED STATES—THE COMANCHE RETURNS.

Special Correspondence to The Marine Record.

CLEVELAND, August 26.

Mr. E. A. Beale, inspector of the U. S. Weather Bureau, is in the city this week, and in company with Major W. B. Stockman, local forecast official, is scouring the place for suitable quarters in which to establish the Greater Cleveland Weather Bureau. Mr. Beale, who stands next in authority to Chief Moore, has been directed to establish his headquarters in this city. This will considerably enlarge the suite of officers necessary to accommodate the local bureau, the work of which will be further extended by the installation of additional apparatus for automatically recording meteorological data, and of machinery adapted to the publication of the new chalk plate process daily weather maps. The new Cleveland office will, in the scope of the work and the completeness of its equipment be second only to the headquarters of the Weather Bureau at Washington. Cleveland was selected as Inspector Beale's headquarters partly on account of its central location as regards the weather offices of the United States, but largely because of the importance of the port as the headquarters of the lake marine interests to which the Bureau has always been of great service. The selection of Cleveland was made by Chief Moore, who instantly saw, on his recent visit, the superior advantages this locality afforded for the location of an office of this description. The signal ability shown by Major W. B. Stockman had probably also a good deal to do with the selection, as the Major will, of course, be of the greatest assistance to Mr. Beale in the performance of his duties.

It is a pleasure to announce that while the condition of Capt. W. S. Mack, who suffered a stroke of apolexy last week, has been very critical and at times extremely alarming, he is much better, and his family feel that they have now well-grounded hopes for his recovery.

General Freight and District Passenger Agent D. C. McIntyre, of the D. & C. S. N. Co., who has not been well all summer, but who has been seriously ill at his home in Detroit for a few weeks past, is rapidly regaining his strength after an attack of Bright's disease.

Mr. H. M. Hanna's steam yacht Comanche arrived Tuesday from the coast, having come in after a good voyage by way of the St. Lawrence River. She has been absent from port for two years. Capt. Joe Gorman piloted her up.

Gen. Mangr. James Wallace, of the Cleveland Ship Building Co., has returned after a two weeks' vacation spent on the Island of Nantucket, whither he went after the return of his father, President Robert Wallace, who spent several weeks at the same place, among relatives.

Secretary Luther Allen, of the Globe Iron Works Co., has arrived in England, having crossed on the Campania in company of Secretary Ryerson Ritchie, of the Cleveland Chamber of Commerce.

WRECKS AND WRECKING.

What may prove one of the few total losses of the season occurred on Lake Superior at 8 o'clock Wednesday morning, August 26, when the schooner Phineas S. Marsh, owned by Capt J e Doville and sailed by Capt. William Somerville, both of Cleveland, waterlogged with a cargo of 850 tons of stone five miles east of Two Heart River. The schooner had sprung a leak, and filled rapidly. Master and crew, nine in all, were taken off with great difficulty by Capt. Robert M. Small and his crew, of Crisp's Point Life-saving Station. The Marsh was valued in Inland Lloyds at $12,500, rating A 2, and was insured for $9,000, divided as follows: Union Marine, $2,250; Reliance Marine, $1,000; Marine, $1,750, beside covering a freight list of $1,200; Sea, $1,000; British American, $1,500; Greenwich, St. Paul Fire and Marine, and Providence, of Washington, $500 each.

Capt. Doville was advised by telegraph Thursday morning that the Marsh had come ashore near Two Rivers, but was in a badly wrecked condition.

The Canadian tug James Clark, owned by Capt. J. Craig and J. W. Darling, of Collingwood, Ont., was found by the water's edge near Mitchell's Bay last week. She was valued at $5,000 and was partly covered by insurance.

Under the superintendence of Capt. George McLeod, of Buffalo, the steamer Wm. Chisholm, sunk by collision in Lake St. Clair, had the 19x10-foot hole in her quarter patched by a diver, and was floated Monday, the 24th, without lightering a pound of her 1,800 tons of ore. She reached Cleveland Tuesday and discharged her cargo, going into dry-dock Wednesday. The result of her survey is given elsewhere.

The contract for raising the Oceanica, which collided with the Chisholm, has been awarded to Capt. H. W. Baker, owner of the wrecker T. W. Snook, at a stipulated price, said to be $6,000. It is expected that Capt. Baker will have her in dock in less than two weeks, judging from the excellent results he has accomplished in former years on the schooners David Stewart, S. B. Pomeroy, O. J. Hale, and others. The Oceanica's decks are well under water and her bow is badly opened up, so she is a much more difficult job than the William Chisholm, especially as, being a wooden vessel, she has no water bottom. All vessels are requested to check down when passing the wreckers.

Rough weather in the region of the Straits has greatly retarded Capt. James Reid in his operations on the sunken Cayuga, as he has been able to work on an average of only about one day in seven. If easterly winds prevail for a period of ten days, she will be ready for a lift. He hopes this will come before Septemcer 21.

Mr. Carlos D. Myers fixed upon Sunday last as the date for his test trip with his diving machine, but so far no announcement has been made regarding the results. In addition to the machine itself, considerable paraphernalia had to be put aboard the steamer E. H. Jenks, which has been chartered for the trip. This includes a large derrick for raising and lowering the car, which weighs four tons. Connected with the derrick is a large wheel, 9 feet in diameter, with 12 grooves for the air hose. This reel will carry about 200 feet of pipe and will, of course, allow the car to descend that distance. A small steam engine has been provided to work the electric dynamo and the air pumps. The object of the expedition is to find the steamer Norman, sunk off Middle Island, and to place chains under her, preparatory to raising her; but should the wreck not be located the expedition will be a marvelous success of the apparatus is given a satisfactory test.

The H. D. Root wrecking expedition, with the invention of Mr. Smith, of Milwaukee, is still at work searching for the wreck of the Pewabic, and if unsuccessful for so long, will continue the search as long as the weather will allow.

On Wednesday morning of last week a trunk washed ashore near Ashtabula, which was evidently the property of Capt. George McKay, master of the Little Wissahickon, who was lost with her July 9, on the north side of Lake Erie. The trunk was upside down, open and empty. Strewn about were papers of various sorts, besides linen. The trunk had not been riffled, but had been torn open by the sea. Among the papers, which all bore the name Little Wissahickon, there was an envelope addressed to Capt. McKay, Bay City, and postmarked April 16, 1896, Capt. McKay's master's certificate, a time book, and large account book. These have by th's time been recovered by the dead man's family.

The wrecking tug Boynton, with a full wrecking outfit on board, has been stationed at Sailors' Encampment, St. Mary's river, in charge of Capt. Hendricks, for the remainder of the season.

NOTICE TO MARINERS.

GAS BUOYS IN ST. LAWRENCE RIVER.

Notice is given by order of the Lighthouse Board that on or about August 25, 1896, the following-named spar buoys in the St. Lawrence River were replaced by gas buoys:

Bay State Shoal Buoy, No. 5.—A 20-foot black spar buoy, marking the SW. end of a small 5-foot shoal, 1½ miles below Cross-Over Island on the E. side of the channel.

Empire Shoal Buoy, No. 6.—A 20-foot red spar buoy, marking the outer edge and upper end of an 8-foot shoal, on N. side of the channel, just below Sister Island Lighthouse.

Chapman Shoal Buoy, No. 14.—A 20 foot red spar buoy, marking the SE. point of a shoal 1,370 feet WSW. ½ W., from the W. end of North Colborne Island.

Bearings are true, and distance are in statute miles.

THE FREIGHT SITUATION.

Mr. W. A. Livingstone, of Detroit, has made a most excellent suggestion, which appears in our Detroit letter, to the effect that owners of vessel property get together and agree to lay up one half of their boats. As so many are now in ordinary perforce, it seems that such a combination might be made to work for the balance of the season, as it is the only means by which vessels can be made to pay and profits. Grain rates went off to 1⅛c on corn from Chicago to Buffalo, but through the efforts of the vessel men, who see no more business in sight at losing than at living rates, a recovery to 1¼c resulted. Duluth is paying 1¼ to 1⅜c on wheat to Buffalo.

One or two wild ore charters have been made at 40c from Escanaba, and boats are being placed for both hard and soft coal at 20c; but the volume of business in these lines is best described by the chemists' term of "trace."

Wheat in store at the head of Lake Superior is apportioned among the various terminal elevators as follows: Belt Line, 598,256 bu.; Consolidated, 953,400; Globe, 2,569,857; Great Northern, 286,649; Superior Terminal, 619,516; Consolidated B, 80,339; Consolidated H, 79,771; total, 5,187,788 as compared with 4,376,612 bushels a year ago. There is 12,542,306 bushels of wheat in store at Minneapolis, a decrease during the week of 669,440 bushels.

NORTHERN STEAMSHIP COMPANY—LOW SEPTEMBER RATE.

The Northern Steamship Co.'s regular passenger season has practically closed, and Gen. Pass. Agt. Heard now announces a series of September sailings at low excursion rates. He also calls attention to the fact that the month of September, particularly the first half, is the finest of the year. He thinks the inducements offered cannot fail to bring those, who for various reasons, have been compelled to postpone their summer outing. The rates are: From Buffalo to Mackinac Island, $10.75; to Sault Ste. Marie, $12; to Duluth, $20; to Chicago, $18. From Cleveland to Mackinac Island, $7.50; to Sault Ste. Marie, $8.75; to Duluth, $17; to Chicago, $13. From Detroit to Mackinac Island, $6; to Sault, $7.50; to Duluth, $14; to Chicago, $13. Mackinac Island to Duluth, $12.50; Sault Ste. Marie to Duluth, $9.50; Duluth to Chicago, $20. Excursion rates to Duluth and St. Paul will be $5 higher than the Duluth rates. The same rates hold going opposite ways. Sailings will be as follows:

Leave Buffalo Sept. 1, 4, 8, and 11; Cleveland and Detroit Sept. 2, 5, 9, and 12; Mackinac Island and Sault Ste. Marie, Sept. 3, 6, 10 and 13; arrive Duluth Sept. 4, 7, 11, and 14.

Leave Duluth, Sept, 1, 5 and 8; Sault Ste. Marie and Mackinac Isiand, Sept. 2, 6, and 9; Detroit and Cleveland, Sept. 3, 7, and 10; arrive Buffalo, Sept. 4, 8, and 11.

The Georgian Bay Lumber Company's mill at Port Stevens, Ont., was fired by lightning and completely destroyed on the 16th instant. Loss $50,000,

COMMISSIONER CHAMBERLAIN TO VISIT THE LAKES.

The commercial interests of the Great Lakes are always glad to learn of any proposed visit of national government officials, from either the executive, legislative or judicial departments to the inland seas. No columns of dry statistics, no matter what showing they may make, can produce such lively impression of the vast extent of our fresh water commerce as is made by even a short trip along the track of this great merchant fleet. Therefore, it is with a sense of great gratification that it is announced that Mr. Eugene T. Chamberlain, Commissioner of Navigation, expects to take a trip up the lakes early in September. The visit is partly at least, in the nature of duty, as the commissioner doubtless desires to see for himself just what are the conditions that require such careful navigation through the Sault, and to take a look over the ground in order that he may decide more intelligently upon the requests which will come before him during the fall and early winter for the remission of fines imposed for violations of the new regulations. But this visit will certainly deepen the thorough appreciation which Mr. Chamberlain has already shown of the importance of lake interests.

DEATH OF CAPT. JOHN FITZGERALD

Capt. John Fitzgerald, president of the Milwaukee Dry-Dock Co., and for years one of the most prominent men connected with wooden shipbuilding on the Great Lakes, died at his home, No. 817 Marshall street, Milwaukee, early Saturday morning, at the age of sixty-three years. He had not been well for two or three years past, and for the last three weeks had been confined to his bed and suffered greatly from ulceration of the bowels.

Capt. Fitzgerald was a well-known lake navigator in the days of the sailing fleet, and had a number of commands, including the bark Parana. The last vessel which he sailed was the schooner Joseph Paige, which he brought out in the spring of 1872. The following winter he went into the tug boat business in Milwaukee with the Starke Brothers. About a year later he bought the Milwaukee shipyard, in the Menomonee Valley, and continued at the head of that until 1891, when his company acquired the Wolf & Davidson plant, and thus secured control of all the shipbuilding and repair work at that port.

Capt. Fitzgerald leaves a widow, a son, William E. Fitzgerald, secretary and treasurer of the Milwaukee Dry-Dock Co., and a daughter, Mrs. Josephine (F. W.) Smith. He is also survived by four brothers, R. P. Fitzgerald, the well-known Milwaukee vessel agent; William Fitzgerald, United States Inspector of Steam Vessels at Milwaukee, and Edward and M. Fitzgerald, of Port Huron. Mrs. Lamb, a sister, lives in Dakota.

The funeral was held at 3 o'clock Monday afternoon from the family residence on Marshall street, and was largely attended. The service was conducted by Rev. Judson Titsworth, and a brief address upon the personal character and great worth of the deceased was delivered by Col. Fallows, of Chicago. The pallbearers were E. S. Stone, of Oconomowock, Fred Stark, George C. Markham, A. M. Joys, and J. G. Joys, Milwaukee, and J. G. Keith, of Chicago, all warm friends and business associates of the deceased. The interment was at Forest Home cemetery.

The Milwaukee Wisconsin recalls a famous voyage from the east shore of Lake Michigan, made by Capt. Fitzgerald when in the Parana. He was caught out late in the season. Nothing was heard from him and there was considerable anxiety felt for the craft. She finally came into port looking like an iceberg, loaded down with tons of ice. Capt. Fitzgerald had to go to the masthead to navigate her, in order to see over the steam that was rising from the ice.

Capt. Fitzgerald's death has been keenly felt among his many old friends and associates in the marine fraternity, and suitable expressions of grief and sense of loss have been adopted at several lake ports.

The big steel barge Aurania broke the Marquette cargo record by taking out 3,900 tons of ore.

The steamer Queen City has broken all previous records by bringing down 207,000 bushels of corn from Chicago to Buffalo. She drew 16 feet 3 inches forward.

IN THE ENGINE ROOM.

TESTING STEEL FOR MARINE ENGINE CONSTRUCTION.

At the French government engine works at Indret the steel used is classified under three heads, namely, (1) semi-hard (32 to 35 tons tensile strength with 20 per cent elongation) in the forms of hammered blooms and hexagonal bars; (2) castings to pattern; (3) soft (25 to 29 tons tensile with 23 per cent elongation), and extra soft (21.6 to 25.4 tons tensile with 25 per cent elongation), also in blooms and bars. The tensile tests are made with the Thomasset testing machine, in which the stress is continuously indicated by a mercury column, while the changes in the test-piece are recorded graphically by a registering apparatus designed by Richard Brothers, the latter addition being especially useful in fixing the elastic limit—a factor which, for constructive purposes, is of greater value than the ultimate strength.

The toughness, or resistance to fracture by impact, is in the harder qualities tested by the falling-weight method, on what is known as the Ruelle machine, where the test-piece—200 millimeters long and 30 millimeters square—laid upon knife-edges 160 millimeters apart and projecting 50 millimeters from the anvil, is subjected to the blow of a falling weight of 18 kilos., with a rounded end striking midway between the points of support. The minimum weight of the anvil is 350 kilos., the height of a fall and other conditions varying with the class of material. For blooms the whole number, and for bars one-half of the test-pieces must not break before the fifteenth blow, when the fall is 2.75 metres; while for unforged castings with test-pieces of the same size the initial fall is 1 metre, which is increased progressively by increments of 5 centimetres to a maximum of 1.5 metre, the half limit of resistance being applied as in the case of bars.

Soft steel is tested for toughness by the forge test of doubling under the hammer when water-hardened. The author considers these tests, especially the last, to be essentially unsatisfactory, as so much depends upon the degree of heat employed. If the metal is too cold the hardening effect of the water is nil; while if the proper heat (about 9,000) is used, the structure is so much changed that the test may be satisfied even by steel originally of bad quality. It is therefore proposed to modify the falling-weight test, that it may serve both for breaking and bending uses. In this method the test-piece—20 millimetres square—is clamped in a holder with an overhanging length of 100 millimetres, which receives the blow of the tup on its outer end. The bar is nicked on all four sides in the plane of the outer face of the holder, and when so weakened it can be broken by a single blow of the weight falling from a height varying with the quality of the metal, and which is called the height of rupture. If, however, the section is not weakened by grooving, the overhanging part is merely bent by the blow, and the angle of deflection produced is taken as a measure of the rigidity of the metal. This angle may be from 140° to 160°.

The author considers that steel in the "natural" state is sensibly brittle, whatever may be the amount of carbon contained, and that a soft or extra soft metal giving 25 per cent elongation is not sensibly safer against breaking than the stronger but less ductile kinds of 30 tons to 38 tons tensile strength, and that the latter should be preferred for moving parts, subject to wear from friction, such as piston rods, guide blocks, slide-valve faces, etc., as many accidents to engines on service have arisen from the use of piston rods made of steel of too soft a quality. In all cases the metal must be subjected to the process of double-tempering, i. e., a a first tempering from a bright cherry red, to effect the transformation of the grain, followed by a second from a dull red, which is more properly annealing, for bringing down the hardness to the required degree, and removing strains producing brittleness. The effect of this process in modifying the fragility and elastic limit in forged steels of the two classes is shown in the following results, obtained by tempering the test-pieces in water at about 170° F.:

	Soft.		Semi-Hard.	
	Natural.	Tempered.	Natural.	Tem.
Elastic limit, tons	12.0	20	16 0	26.7
Height of rupture, metres	0.2	2.0	0 2	1.8
Angle of bend degree	143	153	151	158

In a second series of experiments the bloom was reduced under the hammer to two-thirds of the original section, with the result of rendering it more homeogeneous, which without altering the ultimate strength and elastic limit has a very marked influence on the elongation, and more particularly upon the contraction, which not only becomes larger, but also more regular, being for semi-hard steel when

	Forged.	Natural.
Non-tempered—elongation	24—25 per cent,	instead of 13—16 per cent
Tempered—elongation	17—18 per cent,	instead of 7—11 per cent
Non-tempered—contraction	70—80 per cent,	instead of 14—24 per cent
Tempered—contraction	141—163 per cent,	instead of 22—70 per cent

The method of double-tempering is now applied at Indret to all forgings for engine work, and with the exception of the larger engine framings, to most of the castings. A further advantage in its use for these is that there is greater certaidty in detecting unsound castings. The tempering plant is capable of handling objects not exceeding 6 metres in length. Screw-shafts are received forged and tempered at the makers' works (Creusot and Saint Chamond) subject to the following conditions:

The shafts of steel, either tempered and annealed or double-tempered, must satisfy the following tests: Two sets each of five test pieces to be taken from slabs cut out of a waste piece of the full size of the shaft and parallel to its length, those for tensile and elastic limits being 100 millimetres long by 13.8 millimetres square, and those for impact 20 millimetres square and not less than 180 millimetres long. These are to be cut to shape cold, and if any of them are unsound others may be cut from the same slabs; but should these be defective the article may be rejected. Three out of five pieces are to be tested for elastic limits, and incidentally for tensile strength and elongation; but these latter tests are not material. Should the elastic limit of any one be below 28 kilos. per millimetre, or that of the mean of the three below 30 kilos., the other two shall be tested, when after rejecting the lowest of the five, the average of the four must not be below 30 kilos. or any one below 28 kilos.

For the impact test the bars are to be scored on all four sides, at a distance of 100 millimetres from one end, by a cutter of the form of an equilateral triangle of 1 millimetre in the side, made very exactly to gage. When clamped in the holder by a length not less than 80 millimetres, the piece must not break under a single blow of a weight of 18 kilos. falling 3 metres. Should any one of the three pieces fail, the test is to be extended to the remaining two.

Any article not satisfying the tests specified above, may, after retempering or annealing, be subjected to a second trial.

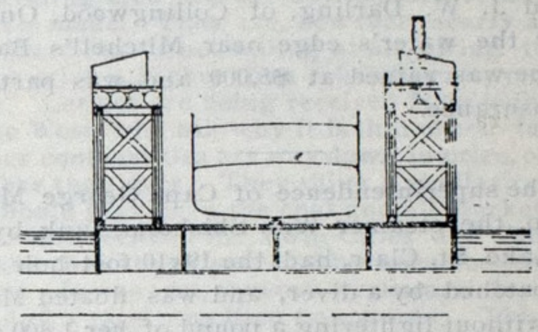
These conditions, which are perfectly satisfactory to the manufacturers, are especially valuable as giving a precise idea of the practical value of the material and have also led to a considerable reduction in the number of test pieces required in carrying on the current work of the establishment at Indret.—Institute C. E. Foreign Abstracts.

PROSTRATION AMONG NAVAL ENGINEERS.

The alarming news received at Washington Aug. 13, by the Navy Department, telling of the physical collapse of Chief Engineer George E. Tower and Passed Assistant Engineer Andrew McAllister, both of the battleship Indiana, gave rise in the minds of naval officers on duty here to the question whether in the care of our warships the danger line had not been crossed in the attempt of the overworked naval engineers to carry on the exacting duties required of them. The North Atlantic squadron has now had only eight days of grand maneuvers, and during that short period the efficiency of the most powerful battleship of the fleet has been temporarily impaired, two of the four naval engineers attached to the vessel having been condemned by medical survey and sent to the naval hospital for treatment. "It is not surprising," said a prominent official, "that this repeated tale of the prostration of naval engineers is heard from our warships. In the British service there are one-half as many engineers as deck officers, while in the American navy there are only one-fourth as many engineers as there are officers of the line. The physical history of the Corps of Engineers," he continued, "during the past two years is a sad one, and it emphasizes the fact that not only must the number of engineers be increased, but their condition should be improved in order to render the ships efficient for the day of battle. The engineers are now working under an organization which was founded upon the necessities of wooden ships, but which is not adapted to vessels of steel."

COMPRESSED AIR DRY-DOCK.

We illustrate this week a dry-dock, the invention of August Geiger, engineer, of Portland, Oregon, operated by compressed air. The dry-dock is of the floating type, but unlike ordinary floating dry-docks, it has no bottom, so that the water can flow in and out with perfect freedom. This dry-dock has no pumping machinery; in its place an air compressor is used. The compressor is located upon an elevated platform, running parallel with the long sides of the dock, and is connected by pipes to the different water-tight compartments into which the dry-dock is divided. In order to lower the dock, valves near the compressor are opened, air rushes out, and water flows in from underneath, causing the dock to sink. When the dock is to be raised, the compressor is started up, air is forced into the compartments, the water is driven out and the dock rises to the surface. Suppose a vessel of 25 feet draft (about the greatest draft steamers have) was to be docked. It would be necessary to sink the dock about 28 feet, and in order to raise it air pressure of about 14 pounds to the square inch would be required. The higher the dock is raised, the



less pressure is needed. Assuming a dock of 300 feet long, 80 feet wide, and 7 feet depth, we have a large box of 300 x 80 x 7 feet = 168,000 cubic feet. This amount of compressed air is necessary when the dock is out of the water, but as the water displaced has only 7 feet depth, = 84 inches, the pressure required is only 84 inches divided by 28 = 3 pounds per square inch. As the lifting capacity of a dook is equal to the weight of displaced water, it would be in this case, if in a river, 168,000 cubic feet by 62 pounds, = 10,416,000 pounds, = 5,208 tons, less the weight of the dock itself.

One great advantage of such a dock would be the bottomless construction, which in a dry-dock of 300 x 80 feet means a saving of 24,000 sq. ft. of water-tight flooring and calking, which is quite an item; and with this system a cheaper dock can be built than with the old-style pumping machinery. Another point in favor of this style of dry-dock is, that the lifting power acts under the upper side of the big box, which makes it steadier and less liable to topple over than with the ordinary dry-dock, where the lifting power acts under the under side of the big box. Mr. Geiger thinks that compressed air could be more quickly furnished to raise the docks than it would be possible to pump water out by the old system. The pipe connection would be smaller, and in general less machinery would be required.

TELEGRAPHING TO VESSELS AT ANCHOR.

The American consul at Copenhagen reports to the State Department that a young boatswain in the Danish navy has invented a telegraphic apparatus for communication with a ship at a certain anchorage without the use of a direct line. An electric battery, with one pole in contact with mother earth and a telegraphic key and interrupter at the other, constitutes the Bland apparatus, from which cable is laid to and around the anchorage in a coil from 1,000 to 1,200 feet diameter. A seneloid connected telephone aboard the ship completes the apparatus. The plan has worked successfully, and the young inventor is now at work to get rid of the telegraph key and make the communication wholly telephonic. Among the advantages of the new method is that signals in this manner will not, as in case of flags, be visible to an enemy, and that ships moving near the shore can communicate with various stations while passing over locations arranged for the purpose.

We are just in receipt of first copies of a new Hydrographic Office chart of the St. Mary's River, covering the distance between Shifting Point, at the head of Little Mud Lake, and the Turning Buoy, in Mud Lake proper, with a part of the Winter Point Range. The price of this chart is only 25c, although made from the latest surveys. For sale at MARINE RECORD offices, Fourth Floor, Western Reserve Building.

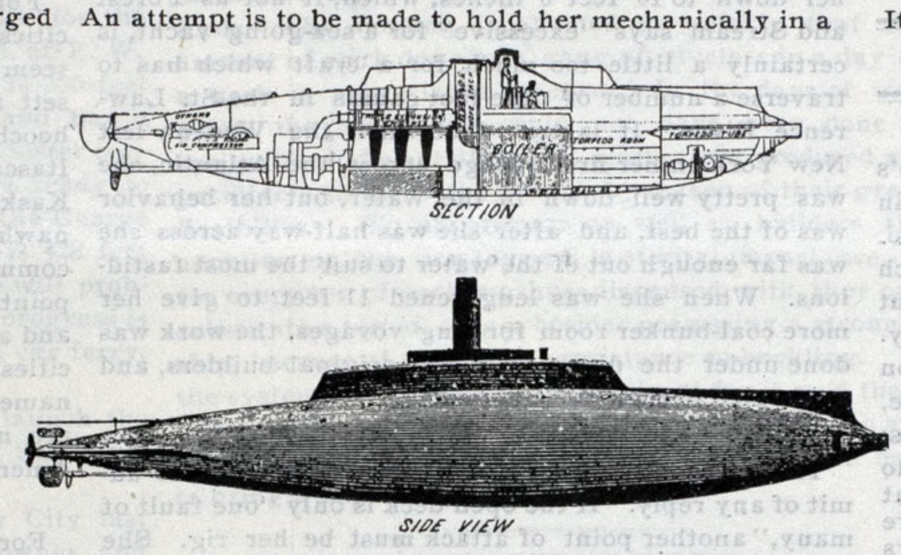
THE HOLLAND SUBMARINE TORPEDO BOAT.

The submarine torpedo boat which is building at Baltimore under contract with the United States government under the direction of Mr. J. P. Holland is well under way and its progress is watched with great interest. Mr. Holland is a native of Ireland, but a citizen of the United States, and has been working on his idea for twenty years. He has built three boats, the first of which was begun in 1877. Ten years later he proved his plan to be so far practicable as to interest the Navy Department, which issued a circular to inventors, calling for designs.

In general appearance the new fighting machine closely resembles a Whitehead torpedo on whose back has been placed a hood in the shape of an inverted boat. Forward of this hood is a vertical fin extending to the bow, and above is the smokestack. This hood forward contains the commander's quarters and the apparatus for guiding the boat; amidships is the smokestack, and aft are the manholes connecting with the exterior. The upper part of the hood is protected by plates 5.9 inches thick, and 1.9 feet high at the place where the hull and head joins. Forward the sides of the hood are pierced with light holes, so the commander can see his course and watch the enemy when the boat is running flush with the water. She is 80 feet long by 11 feet diameter. Her outside plating is ½ inch tapering to ⅞ inch at the extreme ends. Her frames are 3½ by 3½ inches, weighing 12 pounds to the foot.

She can proceed in three ways—light, level, with the water, or awash and completely submerged. In the latter event her smoke-stack and observation tube are housed, and the opening hermetically sealed. In the first condition she has a displacement of 118.5; awash, 137 84; submerged, 138.5; reserve buoyancy, submerged by motion or awash, 0 66 tons; reserve buoyancy, submerged lying still, 375 pounds. Provision is made for the escape of thecrew in case of accident; this takes the shape of buoyant diving helmets or suits, and a method of opening the hatch, so as to escape if the boat remains submerged. When floating light she can be completely submerged within one minute, and when floating awash she can disappear in 30 seconds.

STERN



BOW

HOLLAND SUBMARINE TORPEDO BOAT.

The motive power consists of a boiler heated by petroleum; three triple-expansion engines, each operating a screw; three dynamos mounted on the screw shafts, and finally the accumulators. It is the extent of this propelling power that constitutes the superiority of the Holland boat over any of her class yet designed. She is propelled by her engines as long as the smokestack is above the surface; and for her diving operations, when the smokestack is completely housed, the residual pressure of the steam will be used for the propulsion, water heated under pressure evolving steam for a long time. Then when this fails, she will have her storage batteries and electric motors to operate her propellers. The boat's speed when light will be 13½ knots per hour; when awash she will make 12½, and when submerged, 6½ knots per hour. A particular coupling of the accumulators will even permit her to reel off 12 knots at a push for a short distance. The engines are expected to develop 1,800 horse-power at maximum speed.

The submersion is to be effected in two ways. At her stern she carries horizontal rudders. If the vessel is moving, by inclining these rudders, the bow is caused to pitch downward, and the vessel runs down an inclined plane determined by her axis, the inclined plane really representing the resultant of her buoyancy as a vertical upward component, and her inclination of axis as a downward component. This diving action is similar to that used in the old Tuck boat Peacemaker.

But the vessel is also able to dive from a state of rest. She carries at her bow and stern two screws with vertical axes, actuated by electric motors. By working these screws in one or the other direction, with varying rapidity, the vessel can be sunk or made to approach the surface quickly or slowly, as may be desired. To bring her from the light to the awash position, it is simply necessary to admit water ballast into her reservoir. This may be emptied either by mears of pumps worked by dynamos, or by placing the water ballast in communication with an apartment containing compressed air. The different compartments of the water ballast tank communicate one with the other by means of a pump worked by a dynamo, and set in motion by the displacement of weights on board.

The light scantlings of the Holland boat are believed to be sufficiently strong to allow the boat to navigate at an extreme depth of 66 feet without fear of deformation. She will be operated, however, at a maximum depth of 45 feet, and a safeguard against descending too low is provided in the shape of a diaphragm which will be subjected to the pressure of the surrounding water. When the pressure goes beyond two atmospheres the diaphragm is displaced and establishes an electrical contact, setting in motion a pump for the freeing of the water ballast. Weights of several hundred pounds may also be let go instantly.

The air for the small crew that is to work this boat is to be supplied by reservoirs capable of storing up large quantities, and should it by chance run low while the vessel is submerged, a fresh supply can be secured by a pump sucking in the air by means of an India rubber tube, terminating in a flask, floating on the surface.

It having at last been settled that ocular navigation is impracticable under water, a tube is provided to be raised above the surface when the vessel is submerged, which tube is to carry an inclined mirror or prism, camera lucida fashion, by which the commander will be able to watch the enemy and guide his course. In the restricted volume of the boat a compass cannot be used, owing to the proximity of so much iron and steel. An attempt is to be made to hold her mechanically in a straight course by a triangular drag. The theory of this is that she could be started on a proper course by ocular methods, with the drag set astern of her when on such course, any inclination from the desired direction causing the drag to pull to one side or the other, actuating the rudder so as to bring her back to her original course. Her armament will consist of two torpedo tubes, one aft and one forward, which will discharge automobile torpedoes with great rapidity by means of the compressed air. She will carry five loaded torpedoes.

The New York Sun says that "Secretary Herbert is watching the progress of work on the boat with evident interest, and hopes to show that a trustworthy boat of this character has been developed during his administration, and that another deadly weapon has been added to the naval defences. On her first trip under the water there is not likely to be a rush on the part of officers to conduct it. Chief Naval Constructor Hichborn, under whose bureau the boat is building, may have something to say in selecting the crew, and if he does Commander Charles S. Sperry, of the New York Navy Yard, will be ordered to command the vessel. Commander Sperry was on the board that selected the Holland type and probably knows more about such craft than any other officer in the navy. He is willing to undertake the work and is the choice of Mr. Herbert as well as Mr. Hichborn. It will require an officer of courage and daring to take this strange craft 60 feet down below the surface of the Chesapeake and steam at a six-knot speed. If he can accomplish this and fire a torpedo or two at the same time, there will be no question of the boat's success."

Hydrographic Charts, 408 Western Reserve Bdg.

THE BLACK LIST.

Nearly fifty violations of the Sault regulations have been reported up to date by Capt. Davis, of the revenue cutter Andy Johnson, and some 41 fines have been assessed. The fines have been, as a rule, deposited under protest, and attempts will be made to recover in whole or in part, the sums paid. The list of the unfortunates is as follows:

Minnie M., violating three sections, $600.
City of Bangor, violating three sections, $600.
Cadillac, violating two sections, $400.
Monarch (Canadian), violating two sections, $400.
Centurion, violating two sections, $400.
Yakima, violating two sections, $400.
Eber Ward, violating two sections, $400.
Livingstone, violating two sections, $400.
Business, violating one section, $200.
North Land, violating one section, $200.
Manitoba (Canadian), violating one section, $200.
Rosedale (Canadian), violating one section, $200.
John Owen, violating one section, $200.
Majestic (Canadian), violating one section, $200.
Olympia, violating one section, $200.
Northern Wave, violating one section, $200.
L. C. Waldo, violating one section, $200.
Nyanza, violating one section, $200.
Marina, violating one section, $200.
Maruba, violating one section, $200.
Colorado, violating one section, $200.
Wau Bun, violating one section, $200.
Thomas Maytham, violating one section, $200.
Alberta (Canadian), violating one section, $200.
Vega, violating one section, $200.
China, violating one section, $200.
Olympia, violating one section, $200.
Zenith City, violating one section, $200.
North Land, violating one section, $200.
Sir Henry Bessemer, violating one section, $200.
Eugene S. Hart, violating one section, $200.

It it possible that the Navy Department may experiment with a liquid fuel invented by an Italian. Constructor Vittorio Emillo, of the Italian navy, has had several interviews with Acting Secretary McAdoo and Engineer-in-Chief Melville in regard to an invention he possesses and the Department has informed him that if he will submit the fuel for trial it will be tested at the New York Navy Yard. The Department has not yet received the revised report of the tests of the liquid fuel submited at the New York Navy Yard, and it is doubtful if it will be published until the return of Secretary Herbert.

TRADE AND INDUSTRIAL NOTES.

Have you got a a good thing?
Let the people know it.
Do not keep it to yourself;
Advertise and show it.
Bait your hook with printer's ink
And throw it!

The American Boat Building Co. has been incorporated at St. Louis by John E. Hall, H. W. Stover, and J. H. Brickley.

The Link-Belt Machinery Co., of Chicago, has been running night and day for the past three months. It has on hand at present a number of large contracts for coal conveying machinery, including the order of Coxe Bros., for elevating and conveying machinery for their new coal docks on the North Branch of the Chicago River, Chicago.

The two hydraulic capstans in use on the New American Lock at Sault Ste. Marie were built by the American Ship Windlass Co., of Providence, R. I. This company has just received an order from the Pennsylvania Railroad Co. for a steam towing machine for their tug Norfolk, which tows barges loaded with freight cars from Cape Charles to Norfolk. The company will order a machine for the Norfolk's sister tug as soon as the first machine has been given a practical test.

Henry L. Glaser has been appointed second assistant keeper of Poverty Island light, vice Wm. P. Larsen transferred.

MARINE RECORD

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HERE AND THERE.

Forest and Stream quotes at length THE RECORD'S remarks, in the issue of July 30, which were made in reply to a diatribe appearing in that paper in opposition to the Payne bill, now pending in Congress, which places yachts practically on a level with the merchant fleet as regards American ownership and registry. THE RECORD devoted itself especially to the slurs upon the lake-built steamyachts Wadena and Comanche, upon which the Forest and Stream comments as follows:

When Wadena was lengthened has nothing to do with the question of her design, it is even a fact that she made a trip across the Atlantic and back before being rebuilt; but many of the old salt water sailors who saw her leave Tebo's with her decks nearly level with water never expected to see her again. That she did get back proves just about as much as the recent crazy venture of rowing across the Atlantic in an open boat. THE RECORD chooses its words very carefully in explaining that the object of lengthening was to reduce her draft 10 feet 6 inches, certainly not excessive for a sea-going yacht of her length. The real reason for the alteration was that the yacht as designed had not sufficient displacement for her machinery and coal, and with enough coal aboard to carry her to a convenient coaling station on her ocean trip she had next to no freeboard, her deck being perilously near the water. If this is not bad design, we do not know what to call it, for the yacht was especially designed for a trip around the world. The faults were later remedied at an expense that would have paid a designer's fee many times over.

Comanche is a very serviceable craft, far superior to many other American steam yachts, a good sea boat and elegantly furnished below; but that she is absolutely devoid of that graceful appearance which is popularly supposed to characterize the more costly steam yachts is hardly capable of argument, it is only necessary to look at her. Her deck plan is only one point of many open to comparison in considering her appearance.

* * * * * * * *

We were under the impression that most shipbuilders ask for trade under the representation that they are masters of their profession, fully competent to carry out all contracts that they make; according to THE RECORD, however, it is the duty of the customer to pay for the education and the unsuccessful experiments of the builder. This is closely in accord with the idea prevalent in many trades, that the yacht owner of all men was specially created to pay bills, and for no other good purpose.

The plea of the interference of the owner has come up repeatedly in this discussion, but whatever weight may attach to it, there is in it nothing to justify an ignorance of design. Some of the most conspicuous failures have been made in filling what was practically a *carte blanche* order, with a minimum of limitations from the owner. On the other hand, one of the largest of the new Watson yachts was practically designed in New York last fall under the eye of the owner, who was most rigid in his requirements. Like others who have advanced this same point, THE RECORD fails to explain why there is such a difference as it claims between steam yachts and sailing yachts; in the latter, as in Yampa, Lasca, Emerald and Defender, both owner and designer manage to work in harmony and a perfect vessel is produced; if this method of proceedure is possible with sailing yachts in this country, and with both steam and sailing yachts in England, why is it not possible here in the case of steam yachts?

THE RECORD'S remarks about mudslinging and malice are strongly suggestive of our recent experience with the Marine Journal, which started on the same tack by denouncing our statements as untrue, but when confronted with an opportunity to prove them so promptly declined the issue. As THE MARINE RECORD has assumed to speak with authority as to Wadena and Comanche, possibly it will give us some information which we have been unable thus far to obtain, and tell us who the designers or draftsmen were who made the plans for these American yachts.

* * *

Beginning at the end of the above extract, we would say that THE RECORD is glad to give such information regarding the yachts as lies in its power. The Wadena was designed by Mr. A. Angstrom, now with the Bertram Engine Works, Toronto, who was with the Cleveland Ship Building Co. when the Wadena was built. She was intended originally for a lake yacht, and not for a trip around the world, as Forest and Stream states. She was, it is true, built with a view to going to sea, if desired, but only for coasting cruises, and for these reasons the coal-bunker capacity was limited. After work on the hull was well advanced, the owner decided to put in an ice-making machine, a very heavy affair, and some other auxiliary apparatus. This put her down to 10 feet 6 inches, which, if not as Forest and Stream says "excessive" for a sea-going yacht, is certainly a little too much for a craft which has to traverse a number of nine-foot canals in the St. Lawrence River. It is true that when the Wadena left New York on her first voyage across the Atlantic, she was pretty well down in the water, but her behavior was of the best, and after she was half-way across she was far enough out of the water to suit the most fastidious. When she was lengthened 11 feet to give her more coal-bunker room for long voyages, the work was done under the direction of the original builders, and performed to their satisfaction.

* * *

The criticisms of the Comanche are too general to admit of any reply. If the open deck is only "one fault of many," another point of attack must be her rig. She carries square yards forward, which do, it is true, give her a peculiar look; but Forest and Stream has been the first to charge that it detracted from graceful appearance. The Comanche's spars are for other uses besides carrying lights, and falling back on Mr. Ruskin's theories, we must uphold the spar that actually carries canvas against that which serves only for ornament. But the Comanche needs little in the way of defense, as will be seen by the extract quoted above. She was built by the Globe Iron Works Co., and several members of that company, with the corps of draughtsmen, had a hand in her design, the owner also having a good deal to say about it. And it didn't prove a case of too many cooks, either.

* * *

We make no claim that shipbuilders take any more modest ground than that they are masters of their profession. They certainly consider themselves such when they enter into a yacht contract, and their customer would be the last to dispute the truth. But the owner knows the yacht is to be built for his own convenience and comfort, and he has no hesitation in stating what he wants. He rarely meddles with the hull model; but unfortunately, the hull must be modeled to meet the requirements of the interior, or trouble is encountered at once. The reference to sailing yachts seems almost like begging the question. When owner and builder come together to design a sailing racer, all forces are pointed in one direction and the owner will willingly relinquish his desire for certain little luxuries when he is assured by the architect that they would interfere with the speed lines of the hull. The prospective owner of a steam yacht builds her primarily after ideas of comfort and luxury, speed being secondary consideration. If the impression has gone abroad that the chief use of a yacht owner is to pay bills, we have only to say that most fresh water owners have acted in a manner to fully justify that idea. The excessive expenses have accrued in every case at the express demand of the owners, who have always set aside demurrer with the statement that if they were willing to pay the bills, the shipbuilder was losing nothing by the experiments. The builders do get the blame for mistakes, however, and this fact ought to be more considered by owners.

* * *

The Marine Journal, of New York, has an interesting editorial discussing the probable names of the thret new battleships authorized by Congress. These are to be named after States, and the names most prominently mentioned are Mississippi, Pennsylvania, Virginia, Illinois and Ohio. The first and third are offered on the ground that the name of no Southern State, save Kentucky, has yet been given to a battleship. Pennsylvania supplies a great part of the material that enters into naval construction. Ohio has much the same s or of a claim, and the name is considered euphonious. The Journal says that but two Ohio cities, Cincinnati and Wabash, have been honored in naval nomenclature. A closer study of American geography by the Journal will reduce this number to one, as Wabash happens to be one of Indiana's leading cities. There are Ohio towns thriving under the names Alliance, Lancaster, and Marion, and a hamlet known as Marblehead, but it was not to distinguish any of these that the several ships were so named. Battleships have been named in honor of three lake States—New York, Michigan and Indiana. Now Ohio, Pennsylvania and Illinois should come to the front.

* * *

For the six gunboats there are perhaps six dozen cities anxious to serve as namesakes. Indian names seem to be in the lead. Rhode Island offers Narragansett and Pawtucket; Mississippi, Natchez and Chattahooche; Kansas, Witchita and Topeka; Wisconsin, Itasca and Winnebago; Ohio, Scioto and Miami; Illinois, Kaskaskia; Arkansas, Ouichita; West Virginia, Kanawha; and so on. The idea of using Indian names is commendable from both sentimental and practical standpoints. There is nothing else so thoroughly American, and as so many other names of towns are taken from cities of Europe, there is a possibility of duplication with names of foreign ships, although their naval vessels are not named on the same system as those of the American navy.

* * *

For the new torpedo boats the selection will honor the memories of men illustrious in naval science and warfare. This will be one of the most delicate tasks in this line that ever fell to a Secretary of the Navy, and doubtless more thought will have to be given to its performance. Commodore Perry has long been remembered in the revenue cutter service, but it seems hard that the memory of a man so eminent among naval warriors—and of these America has not a long list—should be relegated to lines so nearly approaching those of civil duty. The name has been applied successively to revenue cutters to perpetuate his fame on the lakes, where warships are almost tabooed; but now that the Perry has been assigned to ocean duty, it would hardly be amiss to make a change, and put the name of Perry where it rightly belongs.

OBITUARY.

CAPT. JAMES PARKS.

Capt. James Parks, a retired vessel master, died at his home in Toledo last Saturday evening, August 22, aged 76 years. Capt. Parks began sailing the lakes in early manhood, and commanded the schooner Rebecca in Antebellum days. Afterwards he sailed Russell Dart, Miami Belle, and Evelyn Bates.

CAPT. HALVOR JOHNSON.

Capt. Halvor Johnson, an old and well known retired Lake Michigan master, died last Monday evening at the home of his son in Two Rivers, Wis., as the result of frightful injuries received in a runaway accident a few days previous. He was about sixty-five years old and leaves a family.

The Minnesota Iron Co. has already enough ore in stock pile for all shipments this season and mining operations are now being carried on simply to keep the married men at work.

SHIP BUILDING AND REPAIRS.

YARDS FAST REDUCING FORCES.

The new ships for the season are being turned out rapidly from the yards, and as no new work is coming in to take their places, the forces are rapidly being cut down, and hundreds of men engaged in the shipbuilding trade are likely to be out of work for a few months. There are no private contracts in sight, and it now transpires that builders will not be invited to submit proposals on the two new revenue cutters until after election. The reason for this delay is the great trouble which the government has just now in getting contractors to bid on any federal work. While contracts may easily be made between two reputable business concerns whereby a readjustment can be made should money take a new basis, there is no such loophole in government contracts, and contractors would be forced to accept payment in whatever coin is stamped as money at its face value. The federal officers making payment would have no option to depart from the letter of this rule, and as a consequence people having dealings of this sort insist on holding off until the financial question has been settled.

No date has yet been set for the launch of the revenue steamer W. Q. Gresham, at the Globe shipyard, but she will probably go into the water on Saturday, September 5. The Sir William Siemens got away from this yard Tuesday night, after a short trial trip in the afternoon, and leaving Cleveland at midnight passed Detroit at 8 o'clock Wednesday morning, a very unusual speed for a ship with brand new machinery. On her trial trip she worked most satisfactory in all respects.

Thursday afternoon of this week was set for the launch of the steel schooner James Wasmyth, at F. W. Wheeler & Co.'s yard, West Bay City. She is 380 feet long by 41 feet beam and 26 feet depth, and has a capacity of 4000 tons on 14 feet draft. Her sister consort, the Sir Isaac Lothian Bell, will not be ready to launch for another month. The steamer, the George Stephenson is going forward rapidly. She is 428 feet long by 48 feet beam and 28 feet depth. She will probably be ready to launch in six weeks. Good progress is also being made on the new steel F. & P. M. car ferry, which is building at the Wheeler yard.

The Chicago Shipbuilding Co. intends to launch the large steel barge George H. Corliss, on next Saturday, August 29.

The new steamship Appomattox left Bay City last Saturday for Duluth. On board were her owner and builder, Capt. James Davidson, his wife, and a small party of friends, who will make the first round trip in her. Before leaving she lay at Young's coal dock all day Friday and was inspected by hundreds of visitors. Work on the other steamer now building at this yard is being pushed along, and she will be ready to go into commission by October 15.

There are also three tugs under construction at the Davidson yard. They are all of the same hull dimensions, each being 90 feet long by 20 feet beam and 10 feet moulded depth. One of these, building for Capt. B. B. Inman, of Duluth, will be launched about Sept. 1. The hull will then be towed to Duluth, where Capt. Inman will install a steeple compound engine and a large boiler. The other two tugs are under construction on owners' account. A letter to THE RECORD from the builders states that "these tugs will be very powerful, modern boats in every way, and will be most economical on fuel consumption. Their engines will be the latest type of fore-and-aft compound, with cylinders 15 and 30 by 26 inches. The engines will have steam reversing gear, and all the latest improvements. They will also have an independent air pump and condenser. The boilers will be made of steel, 8½ by 13 feet, and will be allowed a steam pressure of 130 pounds. All braces around the boiler and engine will be of steel, and they will have steel boiler-houses. The tugs will have steam steering gear, commodious cabins, and will be fitted out with the best appliances of every kind. We are building the tugs very strongly, to stand hard usage, as they are to be used for lake work as well as harbor towing. The Frontier Iron Works, of Detroit, have the contract for furnishing all the machinery and boilers. We expect to have our tugs ready to go into commission October 1. We are well along with the hulls now, and the Frontier Iron Works are hurrying the machinery."

The new Rockefeller whaleback steamer John Ericsson, now in commission, differs from all the others of this type, in that she has her pilot house in the forward turret.

The side-wheel steamer Corona, built at the Bertram Engine Works, Toronto, to take the place of the Niagara Navigation Co.'s burned steamer Cibola, had a private trial on Wednesday of last week, and has been put on the route between Toronto and Lewiston, in connection with the other two boats of the line.

JOGGLED PLATES COMING INTO FAVOR.

There are indications that several lake shipyards are about to adopt the system of joggling plates which was described and illustrated in THE RECORD about one year ago. Mr. F. E. Kirby, on his visit to British yards last year, was favorably impressed with the idea, and other designers and yard superintendents have been advocating the installation of machines for this purpose, the expense involved being inconsiderable when compared with the saving and super-excellence of work effected by the system. Strange to say, the majority of the English yards have, according to Fairplay, been slow in taking up the system, but after a year or more of very successful application in one or two yards, there is a general movement to its adoption across the water. The system was introduced by Wm. Doxford & Sons, and its object is, it will be remembered, to admit of packing being dispensed with, in both the inside fittings and the shell plates of vessels. This is accomplished by simply bending or shaping the plate to fit the place for which it is intended, thus making a more compact and better finished job than is possible when packing is used. The shaping is effected by a machine designed and now manufactured by the Doxfords. The shaping is effected so quickly that the amount of work done by a gang of riveters in a day or a week is appreciably lessened. In the days of iron plates the "joggling" could not have been done so easily, if at all; but the steel plates now produced are peculiarly suited to the process by reason of their great flexibility. To shipowners as well as builders the adoption of the new system is of vital importance, as for every ton of packing thus dispensed with they can substitute a ton of cargo, besides possessing a stronger ship, because of the greater resistance to buckling. If the system has the advantages claimed for it, and these have not, so far, been disputed, ship owners, who are really the most interested parties, should do their best to bring about the change.

GENERAL REPAIR WORK.

CLEVELAND.—The survey on the steamer Wm. Chisholm was held at the Cleveland dry-dock Wednesday afternoon. Capts. George and Daniel McLeod represented the underwriters, and Supt. Robert Kerr, of the Globe shipyard, and Mr. W. C. Richardson, who manages the Cleveland Rolling Mill Co.'s fleet, looked after the owners' interests. The Lehigh Valley Transportation Co. had a representative on hand to make a memoranda of the damage found. The hole in the starboard quarter represented 16 badly damaged plates and half a dozen broken frames. On the bottom the keel and the plates next to it were badly indented because of the numerous boulders on which the Chisholm settled; but while 53 plates have to come off the bottom, nearly all of these can be replaced after rerolling. The Globe Iron Works Co. will attend to the repair job, which will keep 200 men at work two weeks, and will probably cost $12,000 to $15,000.

The repairs to the Bulgaria, which was in the Cleveland dock last week, amounted to 200 feet of new planking. The Richard Martini was in early this week and had her butts calked.

The Ship Owners' Dry-Dock Co. has been quite busy for the last couple of weeks. At present the Philip Minch, which stranded in the Sault after striking another steamer, is in one dock. She had to have a patch put on by a diver before coming to Cleveland. A survey is being held by Capt. C. E. Benham, on behalf of the underwriters, and Charles Hutchinson, representing the owners. Some of her bulwarks and stanchions up forward were damaged by the collision, but the surveyors have not yet been able to ascertain the full extent of the bottom damage, owing to some cutting out that has yet to be done. The repairs will undoubtedly require a week, and will include a new stern, at least nine frames, and about twelve new planks. The R. J. Hackett is in the other dock to repair a bad leak about her stern-pipe. This may necessitate the temporary removal of her shaft. Other recent repair jobs were the Australasia, new wheel, forefoot and forefoot iron, and repairs to stern bearings; E. S. Pease, general overhauling and new wheel; schooner F. W. Gifford, new forefoot, rudder and stern repairs; tugs Riverside, R. K. Hawley, and Charles Castle, calking, general overhauling, etc. The Checotah and Sitka stopped leaks.

Last Thursday evening the Andaste struck the new steamer Siemens while she still lay at the Globe shipyard. Repairs were completed by Tuesday, but the bill will approach $1,500.

The Cumberland is getting new boilers at the Cleveland shipyard. The steamer Hiawatha also got a new smokestack and breeching there.

BUFFALO.—Nothing has yet been done on the steamer St. Louis. She may be cut down and converted into a towbarge. The schooner Ogarita has been in dock to stop a leak.

DETROIT.—The steamer Unique is at the Frontier Iron Works receiving some necessary repairs before being transferred to her new owners. The S. C. Baldwin had her engine taken out at the Detroit dry-dock. The Detroit Dry-Dock Co. have been putting a new smokestack on the Chauncy Hurlbut. The Detroit Boat Works have begun a $2,000 repair job on the yacht Azalea, which will probably be sold when put in good shape. The J. P. Donaldson is getting a new wheel and repairs to stern bearings at the Detroit dry-dock.

MANITOWOC.—Messrs. H. B. and G. B. Burger have completed the thorough rebuild of the steamer F. & P. M. No. 4, making her one of the finest and most comfortable modern passenger boats running on Lake Michigan. She is trim, neat and modern, and is a twin in appearance to the No. 3, which was overhauled a year ago. She was in dock for several months, and in addition to this has had her cabins entirely refitted and redecorated.

MILWAUKEE.—The Milwaukee Dry-Dock Co. have at their west side yard the barge Amboy in dock, having her bottom recalked. The company have just completed a thorough rebuild of the steamer Jim Sheriffs at their south side yard. They have the steamer Hilton in dock getting a leak stopped and have given the steamer John W. Moore a new Sheriffs wheel 11 feet 4 inches in diameter.

CHICAGO.—At the Chicago Ship Building Co.'s shipyard the steamer Onoko is in dock for repairs to her stern bearing; the steamer M. T. Greene was in for similar repairs.

At Miller Bros.' shipyard the schooner James G. Blaine is in dock for a new forefoot, piece of new stern, some new garboards, and calking. The repairs on the steamer Majestic were completed on Tuesday and she went out of dock. The steamer City of Duluth was in for repacking her stuffing box.

REPAIR NOTES.

The tug Gladiator is out of the dock at West Bay City.

The tug Petrel is in the Davidson dry-dock, West Bay City, for a general overhauling.

The steamer Norseman is having her disabled machinery repaired at Alpena.

WIPED OUT BY FIRE.

As if the lake trade were not already unfortunate enough this season, the lumber shipping port of Ontonagon, Wis., has been practically wiped out by forest fires which swept upon the town on August 25. The fire originated in a swamp just south of the Diamond Match Co.'s mills. A 40-mile gale was blowing, and soon the immense planing mill, box factory, and dry-kilns of the match company were soon a mass of ashes. The flames then decended on the business and residence portion of the city, and completely devoured it, barely a dozen houses in the suburbs being left standing. The fire finally lodged in about 65,000,000 feet of sawed lumber on the dock, ready for shipment, which is still burning. While no lives were lost, 1,800 people were rendered homeless, many of them escaping without sufficient clothing to keep them from suffering. The Diamond Match Co., lost $2,000,000 in buildings and machinery, and lumber worth $1,000,000. On all this insurance of $75,000 was carried. The loss on the balance of the village, will, according to newspaper reports, reach $2,000,000, with $300,000 insurance

CORRESPONDENCE.

☞We do not hold ourselves responsible in any way for the views or opinions expressed by our correspondents. It is our desire that all sides of any question affecting the interests or welfare of the lake marine should be fairly represented in THE MARINE RECORD.

EAGLE ROCK.

To the Editor of The Marine Record:

In the winter of 1894, while the steamer American Eagle, Capt. F. J. Magle in command, was plying between Sandusky and the islands, she struck a rock when on a route a little to the westward of the direct course from Lakeside dock to the east end of Ballast Island, and in a line between Carpenter's Point, on Kelley's Island, and Monroe Island, about 1¾ miles out from Carpenter's Point. On the chart it is in this place marked clay and sand, and surmounted by four fathoms of water.

Capt. Magle made a report of this, which was published in the Sandusky Register at the time, and copied in other papers. Several letters passed between the captain and the United States Branch Hydrographic Office in Cleveland. The matter was finally dropped. In the summer of 1895 the steam barge John Oades struck the same rock and was beached at Kelley's Island to prevent her from sinking. The government then began to investigate and search for this unknown obstruction. Last spring the U. S. S. Michigan arrived at Put-in-Bay and the lieutenant in command invited Capt. F. J. Magle aboard the Michigan in order to interview him about this dangerous obstacle in Lake Erie. The captain explained the course his steamer was on when she struck the rock. He also marked it on their chart. Later on Assistant U. S. Engineer W. T. Blunt arrived at Put-in-Bay on the U. S. S. Swansea. He called on Capt. Magle and received information that would lead him to the vicinity of the submarine boulder. The captain also promised that if Mr. Blunt was not successful he would drop a buoy about where the steamer American Eagle struck the rock. This, however, was not necessary, as Mr. Blunt found the boulder in three hours' time after he started in search of it. This is how Eagle Rock was discovered. The water was low in the winter of 1894 and the steamer American Eagle was drawing 11 feet when she encountered this boulder. The passengers aboard at the time will not forget how the steamer jumped when she struck it.

A. R. B.

PROJECT FOR BUFFALO HARBOR IMPROVEMENT.

Major T. W. Symons, Engineer Corps, U. S. A., stationed at Buffalo, has been advised by Acting Chief of Engineers Mackenzie that his project for the expenditure of the available balance for improving Buffalo harbor and of the appropriation under the last river and harbor bill had been approved. The contracts will be given out before the first of the year, and actual work on the improvement will begin in the spring. Possibly some work will be done this fall. Major Symons' project is as follows:

There is at present on hand from former appropriations the sum of $127,064.35, which it is understood is available for and can properly be expended upon the project now in force, as above outlined. With this money it is proposed,

First—To make such minor repairs as may be necessary to the existing breakwater, putting the foundations of the old port on of the work built in 1873-4 in such condition that it can soon receive its needed concrete superstructure. This portion of the project has already been approved.

Second—To prepare plans and specifications for the extension of the sand catch pier from its present outer end to the established bulkhead line. This bulkhead line is understood to be the coincident bulkhead and pierhead line established by the Secretary of War on December 21, 1894. In construction it is proposed to make this extension similar to the old work, and to advertise for bids in the usual manner and let the contract for it, the work to be done this season. This is believed to be the best and most economical method of doing the work.

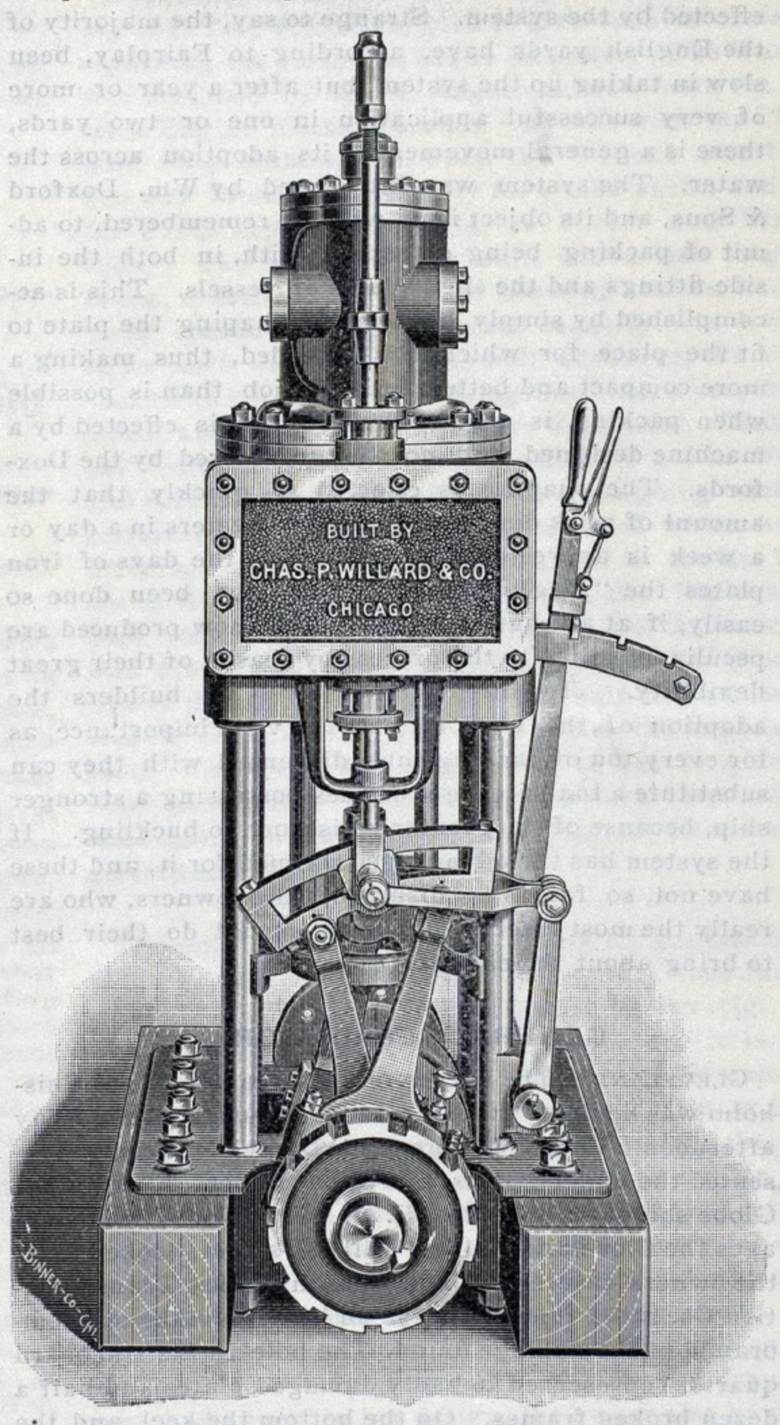
Third—It is proposed to prepare detailed plans and specifications for the work of breakwater extensions with such models and drawings as may be deemed desirable, and advertise for the work, specifying that in accordance with the law the northerly section shall be first constructed.

Assuming that the modified plans as submitted by me on April 6, 1896, will be approved, and that the northern 5,000 feet will be rubble-mound construction founded on an artificial foundation with one opening 2,800 feet from Stony Point, it is proposed to request bids either for the work as a whole or for, first, the 5,000 feet of rubble-mound structure; second, the 4,700 feet of timber-crib structure north of the main opening; and, third, the 2,800 feet between the main opening and Stony Point. If the bids are favorable it is proposed to let the contract for the entire work in one contract; if not, it is proposed to let contracts for different sections as above outlined. The contracts to include the removal of the wrecked shore arm to the depth of 22 feet.

In accordance with the mandatory provision of the law it is proposed to commence the construction at the northerly end and progress for the present towards the south, leaving open the question of the length of the northerly section and the location of the future work.

TANDEM COMPOUND MARINE ENGINE.

The accompanying engraving shows a new steeple or tandem compound marine engine now being built in small sizes by Chas. P. Willard & Co., of Chicago. The particular engine from which this engraving was made is a 6 and 12x6, occupying a space in the boat above the bed-plate of only eighteen inches athwartship and two



WILLARD & CO.'S NEW STEEPLE COMPOUND ENGINE.

feet fore and-aft, and developing, when used in connection with a high-pressure water-tube boiler, about eighty indicated horse power.

This type of engine, approximating very closely in economy to a fore-and-aft compound, represents the very maximum of power in a limited space, taking up no more room in a boat than the ordinary single cylinder engine commonly used, and representing greatly increased efficiency and high economy in fuel.

As shown in the engraving, the cylinders rest upon an entablature supported by four polished steel columns. All parts of the engine are open and accessible. The high-pressure piston rod passes through a bronze sleeve between the two cylinders and is water packed. If buyers prefer a distance-piece between the two cylinders with stuffing boxes, it is furnished, but the other form of construction is recommended by the manufacturers.

The 80 horse-power engine, shown in the engraving, occupies a space above the floor of only 18x24 inches; height above foundation timbers only 53 inches. Further information may be had from the manufacturers, Chas. P. Willard & Co., 197 S. Canal St., Chicago.

ADMIRALTY LAW.

THE CASE OF THE C. P. MINCH—TALBERT ET AL. VS. ELPHICKE ET AL.

(Circuit Court of Appeals, Second Circuit. April 7, 1896.)

SALVAGE—SERVICES OF MEMBERS OF CREW—SHIPWRECK AND ABANDONMENT—In every case where compensation in the nature of salvage has been awarded to seamen, either the voyage has been terminated by shipwreck, or the ship has been abandoned by all, or by all except the salvors, under circumstances showing conclusively that the abandonment was absolute, without hope or expectation of recovery, or that the seaman had been by the master unmistakably discharged from the service.

A schooner was anchored near shore on a dark, squally night, in a heavy sea, when by a change of the wind, she was swung round towards the shore, so that she began pounding on a sandbar, and dragging her anchor. The master directed the yawl boat to be lowered, and told the crew to get ready to go ashore. The mate, cook and one seaman refused to go, and were left on board. On reaching the shore the master went for a tug, which agreed to go out next morning. After he had left, the mate took soundings, found deeper water towards the stern, and let out the anchor chains until the schooner was in deep water, where she rode quietly until morning. The master then rejoined her, and the voyage was completed, and wages paid to the crew. Held, that there was no evidence of a final abandonment of the schooner by the master, and that those who remained on board were not entitled to salvage. 61 Fed. 511, affirmed.

Appeal from the District Court of the United States for the Northern District of New York.

This libel was brought by the mate and a seaman, being two of the crew of the schooner C. P. Minch, to recover salvage compensation for services rendered during a voyage from Portage Entry, a port on Lake Superior, to Buffalo, N. Y. The voyage was completed, neither the vessel nor her cargo of stone sustaining loss or damage, and libelants, with the rest of the crew, paid off in Buffalo. The facts upon which the claim for salvage is based are stated in the opinion. The District Court, Northern District of New York, dismissed the libel (61 Fed. 511) and libelants have appealed.

THE LIBRARY TABLE.

Harper's for September will open with another paper on Gen. Washington, by Prof. Woodrow Wilson. Dr. T. Mitchell Prudden writes in an instructive manner about the traces of the cliff dwellers in the Southwestern States. Other articles are: "Musical Celebrities of Vienna," by Wm. Von Sachs; "In Old Silver," by Theo. S. Woolsey, being a gossipy paper on the characteristics of old colonial plate; "Among the Trees," by Anna C. Brackett, who presents some of the attractions of forestry as a pursuit for women; "The Art of Driving," by Henry Childs Merwin, containing practical suggestions for the proper and most efficient management of the carriage horse. In addition to these there is the usual quota of first-class fiction.

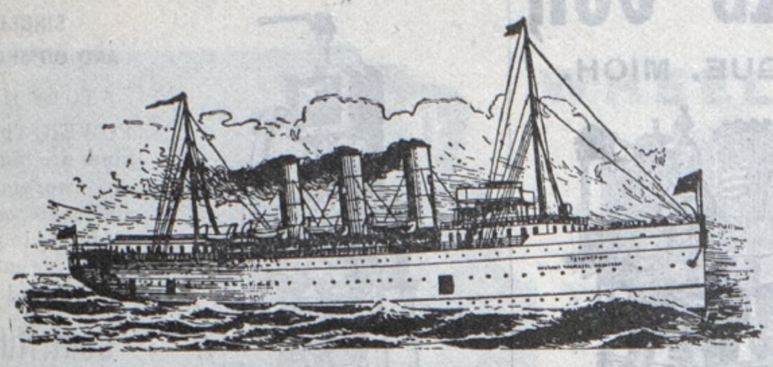
September Scribner's publishes the first adequate account of the new Olympian games at Athens this summer, written by Professor Rufus B. Richardson, who had the advantage of seeing the games under the most favorable conditions. The article is illustrated by Mr. Corwin Knapp, who was sent to Athens on behalf of this magazine. The great natural game preserves of New Brunswick are written of entertainingly by Frederick Irland. Another out-door article is Frank French's plea for beautifying the country roads, and A. F. Jaccaci continues his amusing narative of his out-of-the-way journey in Spain under the title "On the Trail of Don Quixote." The frontispiece is a color reproduction of one of four dramatic panels by Edwin Howland Blashfield, made for a golden piano owned by Mrs. G. W. Childs Drexel.

The Detroit Evening News last Saturday issued an eight-page industrial extra which is a great credit to both paper and city.

WANTED.

To purchase a second-hand 12-inch Rotary Steam Wrecking Pump—Silsby make—with or without boiler. John Donnelly, Jr., Kingston, Ont.

GRAHAM'S RAPID FUELING DOCKS,



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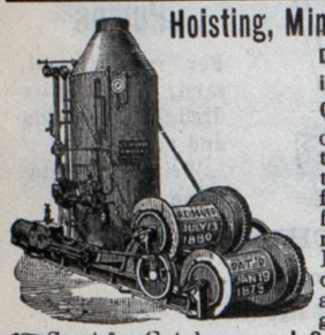

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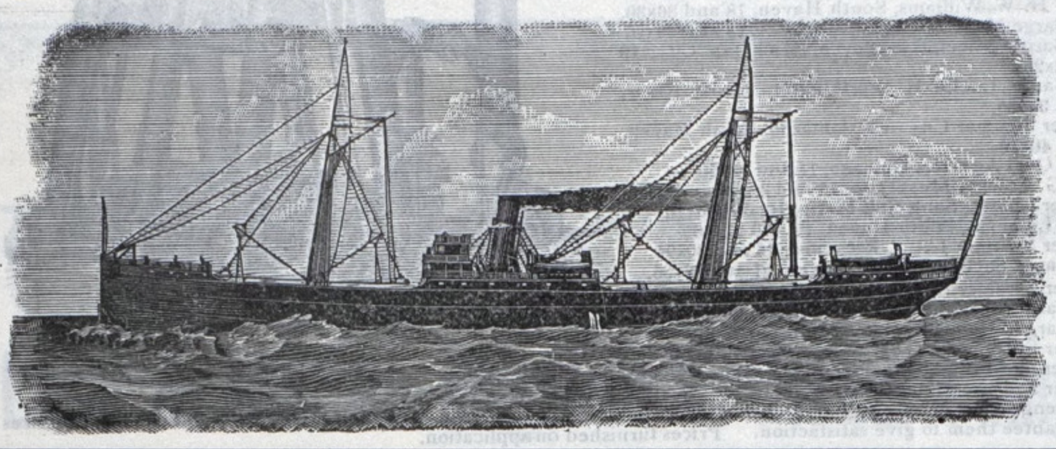

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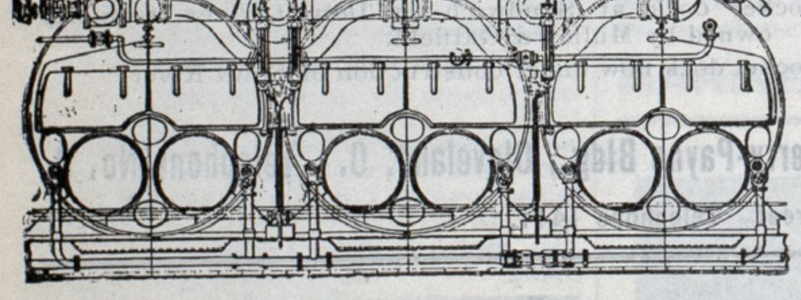

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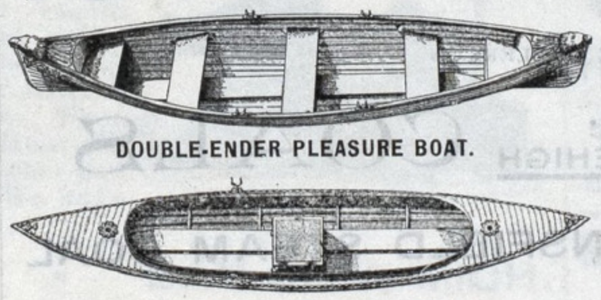

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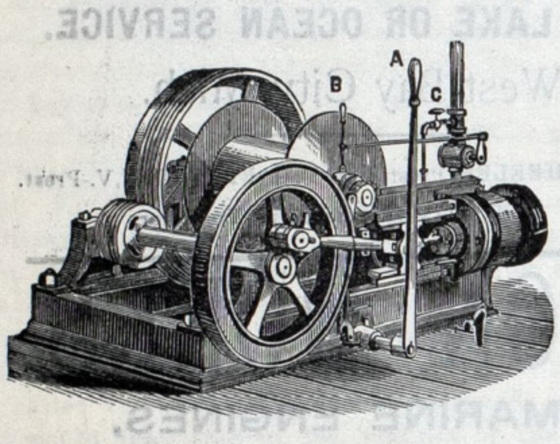

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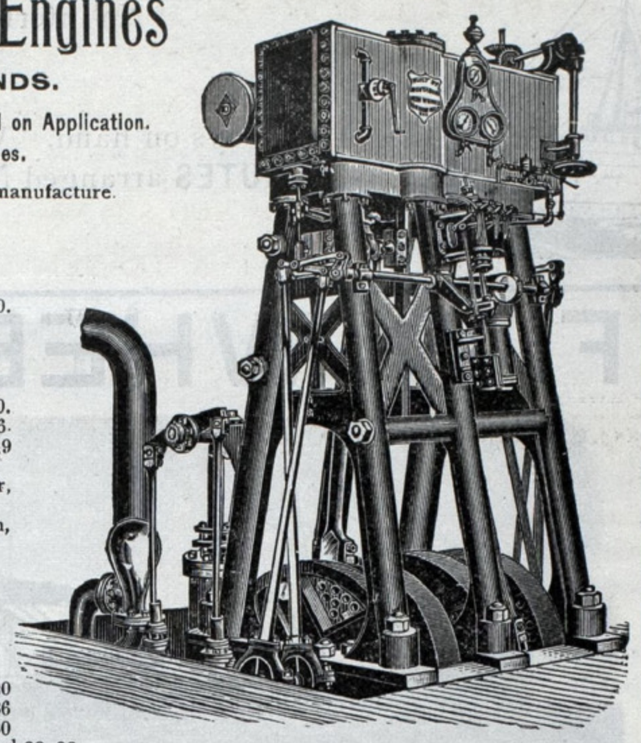

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Steam Barge Luella H. Worthington, Cedar River, 19 and 36x30.
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Passenger Steamer Bon Ami, Saugatuck, 14 and 28x20
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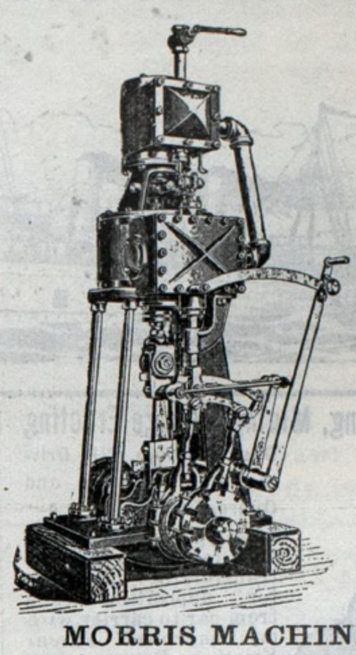

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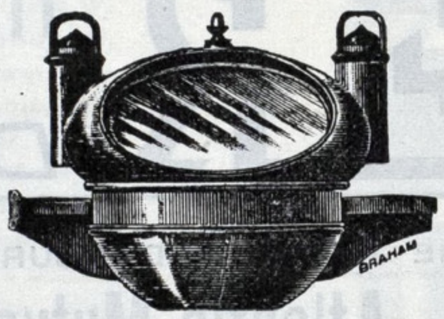

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The Y. P. C. U. of U. S. convention will be held at Omaha, and the Nickel Plate Road will offer excursion tickets for sale Aug. 16th to 24th. 231-34

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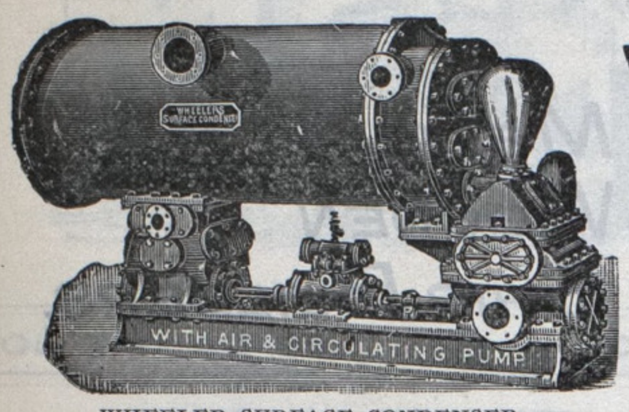

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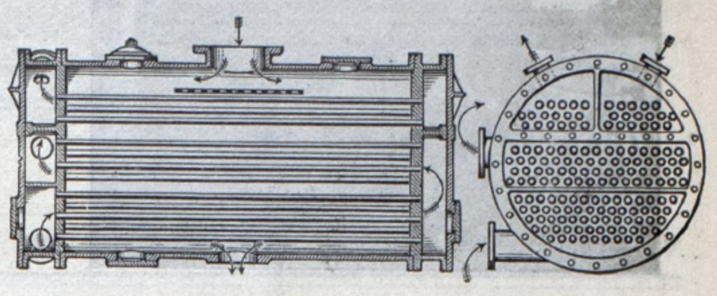

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Toronto Fair, September 1 to 12.

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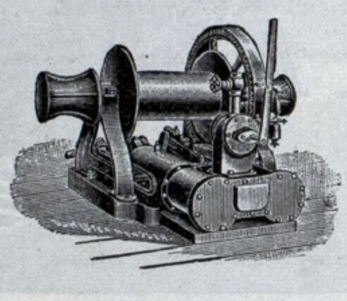

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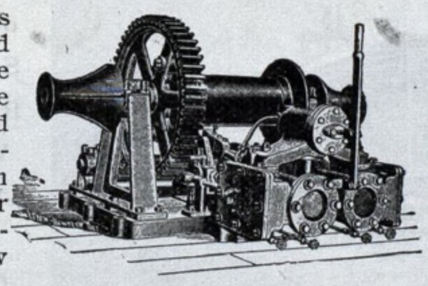

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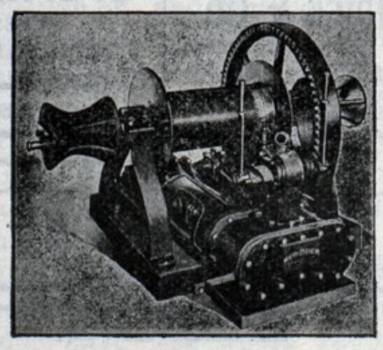

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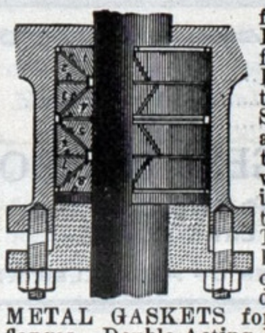

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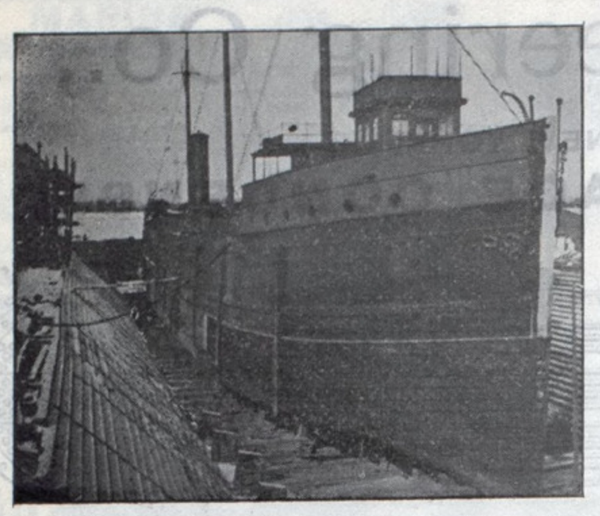

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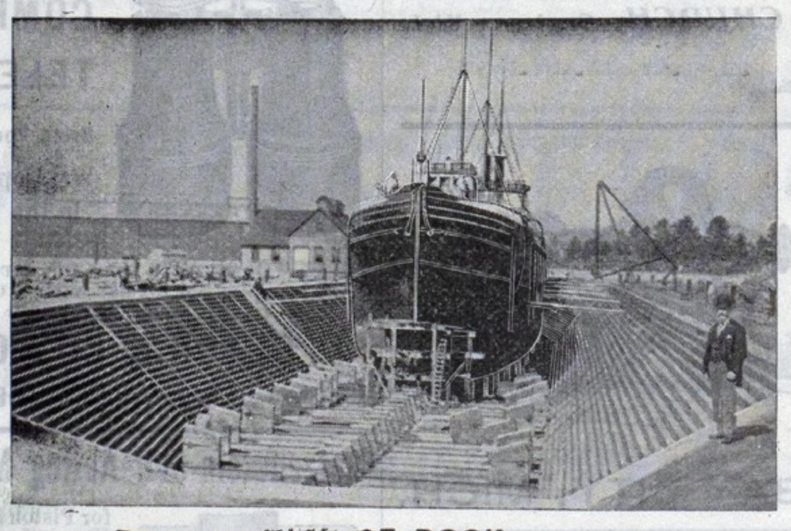

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LARGEST DRY DOCK ON THE LAKES.

PRICES FOR REPAIRS AND DOCKING SAME AS AT LOWER LAKE PORTS.

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DRY DOCKING
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Dimensions of Dock, 236 feet long, 55 feet wide at top and 37 feet wide at gate. Nine feet water over sill.

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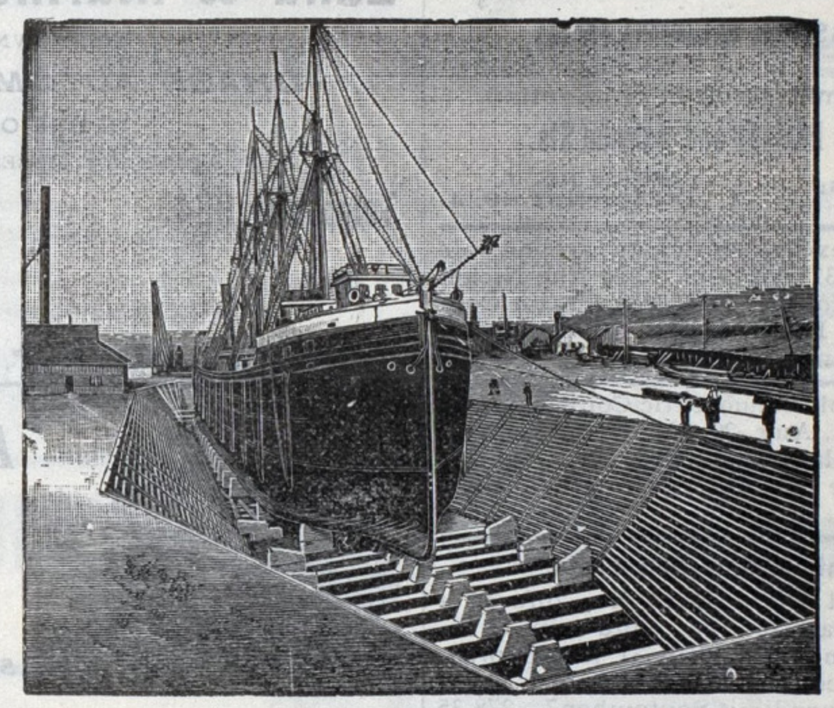

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